

California High-Speed Rail Authority

Los Angeles to Anaheim Project Section

Supplemental Alternatives Analysis Report

April 2016



California High-Speed Rail Project



Los Angeles to Anaheim Project Section

SUPPLEMENTAL ALTERNATIVES ANALYSIS REPORT

April 2016

Prepared By:



Statewide Program

The California High-Speed Rail Authority (Authority) is responsible for planning, designing, building and operating the first high-speed rail in the nation. California high-speed rail will connect the mega-regions of the state, contribute to economic development and a cleaner environment, create jobs and preserve agricultural and protected lands. When it is completed, it will run from San Francisco to the Los Angeles basin in under three hours at speeds capable of exceeding 200 miles per hour. The system will eventually extend to Sacramento and San Diego, totaling 800 miles with up to 24 stations. In addition, we are working with regional partners to implement a statewide rail modernization plan that will invest billions of dollars in local and regional rail lines to meet the state's 21st century transportation needs.

The California High-Speed Rail program is already delivering benefits to California, years before rail operations actually will begin. It has employed over 260 certified small businesses to work on planning, design and construction activities throughout the state, and is creating new jobs and training opportunities. Ultimately, High-Speed Rail will create 3,500 permanent jobs, in addition to tens of thousands of temporary jobs designing and building the system. Once operational, the system will operate on 100 percent renewable energy, providing a clean alternative to the current transportation options that degrade air quality across the state.

As part of the program, the California High-Speed Rail Authority is working with regional partners to implement a statewide rail modernization plan that will invest billions of dollars in local and regional rail lines to meet the state's 21st century transportation needs. The proposed projects would add capacity to allow for more rail service, construct new overcrossings to reduce local traffic delays and improve safety, and implement technologies to increase safety for all users. These improvements will provide immediate benefits to existing rail services and local communities, while also setting the stage for future California High-Speed Rail service.

Los Angeles to Anaheim Section

The Los Angeles to Anaheim Section will connect Los Angeles and Orange counties, traveling between Los Angeles Union Station and the Anaheim Regional Transportation Intermodal Center (ARTIC). In addition to those stations, the Authority is studying the existing Fullerton and Norwalk/Santa Fe Springs Metrolink station areas for their potential to support high-speed rail service. The approximately 30-mile alignment will share the existing Los Angeles-San Diego-San Luis Obispo (LOSSAN) rail corridor, which will benefit from numerous capacity and safety improvements including added track capacity and new overcrossings at roadway intersections. This section provides a tremendous opportunity to realize co-benefits that will be shared among Amtrak, Metrolink, freight operators and the many local communities bordering the route.

The stations in Los Angeles, Anaheim and potential Fullerton or Norwalk/Santa Fe Springs intermediate locations will provide connections to many destinations and transportation options. Los Angeles Union Station is the region's central transportation hub, providing access to Amtrak intercity rail, six Metrolink commuter rail lines, three local rail lines (with several more planned) and bus services from multiple transit agencies. It is adjacent to downtown Los Angeles, a massive employment and entertainment hub providing more than 300,000 jobs. In Anaheim, ARTIC is a new regional transportation center served by Amtrak, Metrolink and numerous local buses from the Orange County Transportation Authority. Nearby destinations include two professional sports venues, Disneyland, the Anaheim Convention Center and several major employment centers. A potential Fullerton Station would provide a direct connection to Metrolink services to the Inland Empire as well as other connecting bus services. At Norwalk/Santa Fe Springs Station an extension of the Metro Green Line is currently being studied. Upon implementation, this extension would provide a direct connection to Los Angeles International Airport via the Aviation/LAX station.

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ABBREVIATIONS AND ACRONYMS

AA	Alternatives Analysis
Amtrak	National Railroad Passenger Corporation
ARC	Anaheim Rapid Connection
ARTIC	Anaheim Regional Transportation Intermodal Center
Authority	California High-Speed Rail Authority
BNSF	Burlington Northern Santa Fe
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CNG	Compressed Natural Gas
CP	Control Point
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
FRA	Federal Railroad Administration
FTC	Fullerton Transportation Center
GIS	Geographic Information Systems
HSR	High-Speed Rail
IOS	Initial Operating Section
LADOT	Los Angeles Department of Transportation
LATC	Los Angeles Transportation Center
LAUS	Los Angeles Union Station
LOSSAN	Los Angeles – San Diego – San Luis Obispo Rail Corridor
Metro	Los Angeles County Metropolitan Transportation Authority
Metrolink	Southern California Regional Rail Authority
MOU	Memorandum of Understanding
Mph	Miles per hour
NEPA	National Environmental Policy Act
OCTA	Orange County Transportation Authority
PTC	Positive Train Control
RCTC	Riverside County Transportation Commission
ROW	Right-of-Way
RRC	Regional Rebuild Center
RTP	Regional Transportation Plan
SAA	Supplemental Alternatives Analysis
SANBAG	San Bernardino Associated Governments
SCAG	Southern California Association of Governments
SCRIP	Southern California Regional Interconnector Project
SCRRA	Southern California Regional Rail Authority
SR	State Route
TOD	Transit-Oriented Development
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VCTC	Ventura County Transportation Commission

Summary

S-1.1 Background and Purpose of this Supplemental Alternatives Analysis

The purpose of the Alternatives Analysis (AA) process is to describe the range of alternatives considered for the Los Angeles to Anaheim Project Section, and to do the following: (1) evaluate whether the alternatives meet the high-speed rail Project objectives and the purpose and need; (2) evaluate and disclose the potential impacts of the alternatives based on a screening level of information, (3) evaluate whether the alternatives are potentially feasible and reasonable; and (4) either recommend alternatives for further study in the environmental clearance process or withdraw them from further evaluation. Figure ES-1 illustrates this process as a part of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) evaluation processes.

This Supplemental Alternatives Analysis (SAA) informs the project description in the project-level environmental documents that will comply with CEQA and NEPA requirements. It also sets parameters for the environmental analysis and design.

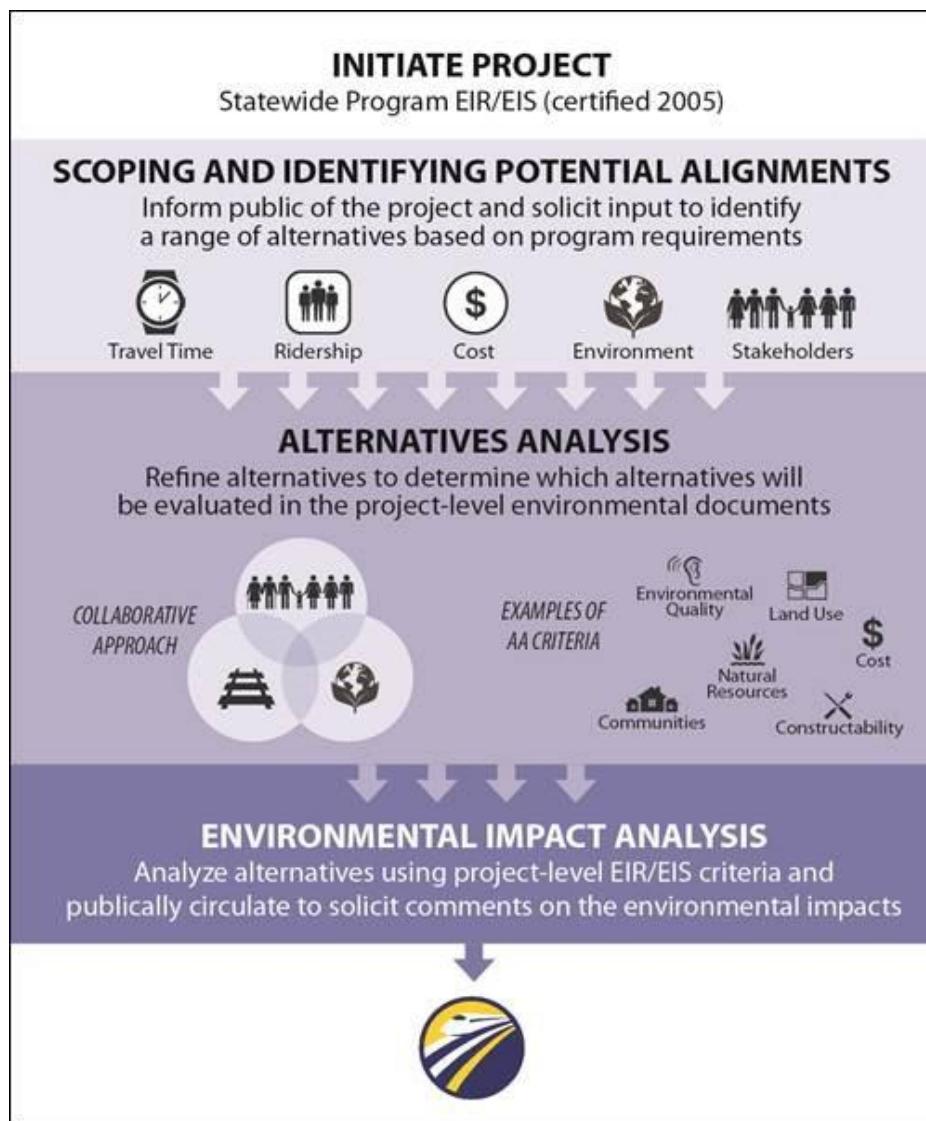


Figure ES-1 Environmental and Alternatives Analysis Process

The California High-Speed Rail Authority (Authority) uses an alternatives analysis (AA) process to screen project-level alignment options in order to determine which alternatives merit detailed study in project-level environmental documents for each section of the California High-Speed Rail System. This Los Angeles to Anaheim Supplemental Alternatives Analysis (SAA) Report updates previous AA reports issued by the Authority for the Los Angeles to Anaheim High-Speed Rail Section. These previous AA reports include the AA Report published in April 2009 and the SAA Report published in July 2010.

The corridor alignment for the Los Angeles to Anaheim Project Section of the California High-Speed Rail System was defined in the California High-Speed Train Program Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) which was certified in November 2005. This alignment originates at Los Angeles Union Station (LAUS) and follows the Los Angeles – San Diego – San Luis Obispo Rail Corridor (LOSSAN Corridor) south to a terminus in Orange County. The Authority decided to study this section of High-Speed Rail System to a terminus in the City of Anaheim, at the now recently completed Anaheim Regional Transportation Intermodal Center (ARTIC).

Due to the constrained nature of the LOSSAN corridor between LAUS and ARTIC, the July 2010 SAA Report identified only two build alternatives for detailed consideration within the defined project corridor: Alternative 1 (previously known as the Dedicated High-Speed Train Alternative) and Alternative 2 (previously known as the Consolidated Shared-Track Alternative). Alternative 1 utilizes a 4 + 2 track corridor configuration and requires the acquisition of additional ROW throughout the corridor at-grade sections. This additional ROW generally includes industrial uses, but also includes some residential areas in the southern sections of the corridor. Alternative 2 utilizes a 3 + 2 track corridor configuration, on a conceptual project footprint smaller than Alternative 1. While in some areas additional ROW would be required for Alternative 2, this concept eliminates the need for additional ROW in the residential areas of the project section south of the Fullerton Junction. Alternative 2 includes components of Build Alternatives that were previously considered between 2007 and 2010 and reflects stakeholder feedback from outreach efforts conducted between 2010 and 2015.

This 2016 SAA reflects the shared corridor concept selected in 2005 and the adopted plans and projects for the corridor, including the California High-Speed Rail Revised 2012 Business Plan, the 2014 Business Plan, and the Draft 2016 Business Plan. The Revised 2012 Business Plan, 2014 Business Plan, and the Draft 2016 Business Plan define a “blended” approach to system construction and operation in order to achieve optimal integration with existing systems. This approach includes phased implementation of the High-Speed Rail System as a whole, while being complimentary and connected to existing services in the area.

S-1.2 Collaborative Planning Approach

The Authority evaluates project alternatives using system performance criteria that address design differences and qualities, and correspond to the project's Purpose and Need and objectives. The Authority considers input from stakeholders through a collaborative approach to alternatives evaluation shown in Figure ES-2. This approach seeks to avoid or minimize potential impacts by balancing the project objectives, environmental resources, and community concerns for any given alternative.

As part of this collaborative approach, many meetings have been held to engage with stakeholders and solicit feedback. The Alternatives Analysis (AA) (2009) and SAA (2010) include descriptions of the outreach meetings the Authority conducted to inform the reports. This SAA provides a list of meetings held since the California High-Speed Rail Authority Board of Directors (Authority Board) was briefed on the 2010 SAA on July 7, 2010.

The feedback from these public meetings was used to develop the alternatives and design refinements shared with the public at several rounds of outreach efforts that took place after the scoping period in the fall of 2014. These efforts are described in Section 1.7.

Summary of Meetings

Six open house meetings held between October and November 2015

48 Technical Working Group/Advisory Group (TWG/TAG) meetings held between 2010 and 2015

169 meetings held with agency staff local to the Los Angeles to Anaheim Project Section

All of these meetings have contributed to the content of this SAA. Over the years, feedback from the public has included issues such as noise and vibration impacts, visual impacts, impacts to community character, project cost and funding, right-of-way, accessibility, consistency with local planning, and other impacts that are documented in this report.

S-1.3 Summary of Recommendations

The purpose of this SAA is to describe the range of alternatives considered for the Los Angeles to Anaheim Project Section and evaluate and disclose (1) potential impacts of the alternatives, (2) whether the alternatives meet High-Speed Rail project objectives and purpose and need, and (3) either recommend the alternatives for further refinement and evaluation in the environmental review process or withdraw them from further consideration.



The alternative development process seeks to balance project objectives, natural resources, and community character.

Figure ES-2 Collaborative Approach

The recommendations of this 2016 SAA are as follows:

Summary of Recommendations

Decrease width of project alternative footprints

Avoid potential ROW impacts to sensitive land uses, specifically residential areas

Increase operational efficiency and safety of existing passenger and freight service within the LOSSAN corridor

Develop alternatives that also provide safety and efficiency benefits to local communities

As described in Section 3.4, two project build alternatives are analyzed in this report in addition to the No Project Alternative: Alternative 1 and Alternative 2. Both alternatives meet travel time and ridership objectives, provide mass transit, highway, and airport connectivity to major urban centers, and maximize ridership and revenue potential. As evaluated in Section 4.1 and Appendix A, Alternative 2 would have fewer ROW impacts, have approximately 30 percent lower capital costs, have less impact on parks, trails and bikeways, schools, historic architectural resources, and generally have less impacts on waters and wetlands, and wildlife, and satisfy the needs of the blended system implementation. Therefore, the No Project Alternative and Alternative 2 are selected to be carried forward for further analysis.

Project Alternatives to be Carried Forward

No Project Alternative

Project Alternative 2

Stations:

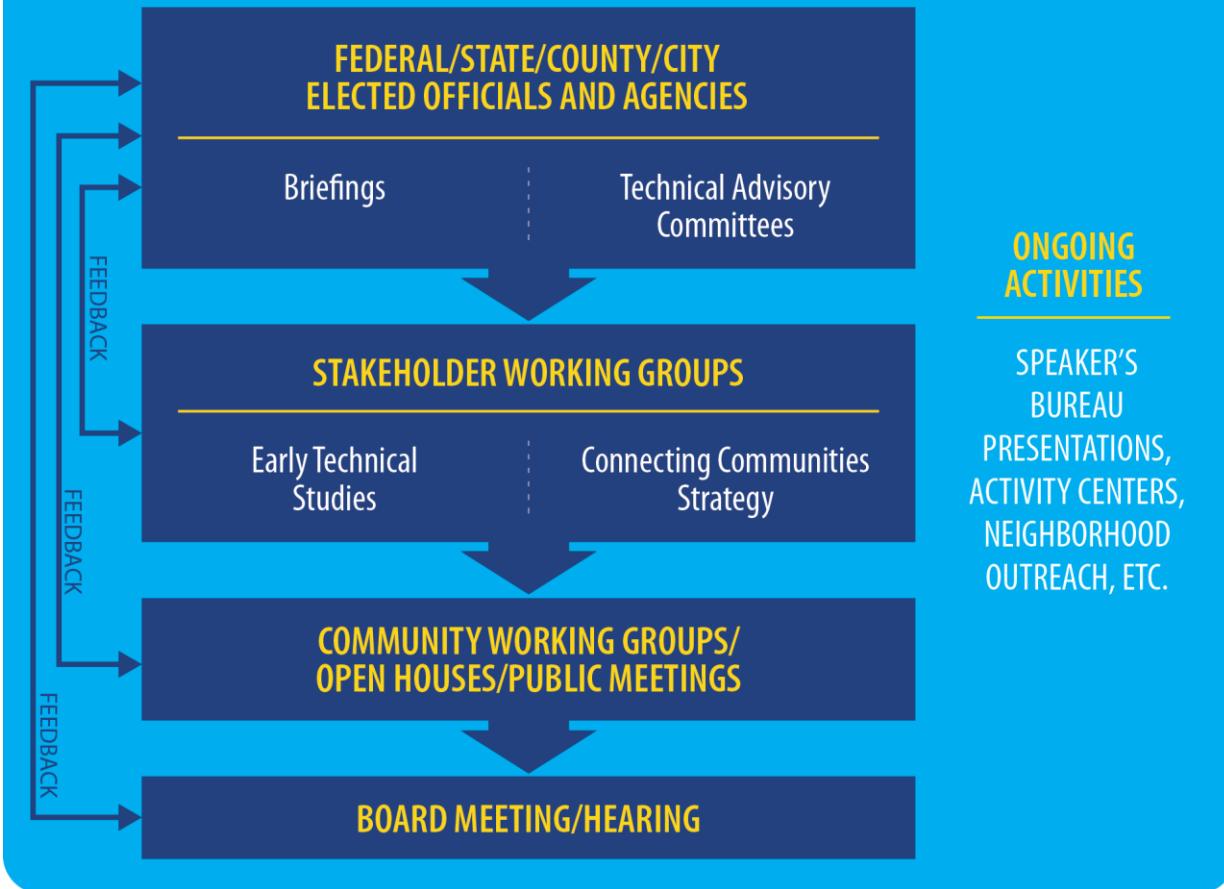
- Los Angeles Union Station (LAUS)
- Norwalk/Santa Fe Springs (Optional)
- Fullerton (Optional)
- ARTIC (Anaheim Regional Transportation Intermodal Center)

Each of these stations and optional stations are described in Section 3.5.3 of this 2016 SAA. While Norwalk/Santa Fe Springs and Fullerton are optional stations, they will be analyzed in future environmental documents with the same level of detail as the LAUS and ARTIC stations.

S-1.4 Next Steps

This SAA recommends which alternatives should be subject to further refinement and evaluation in the environmental review process. The Authority would continue engaging with local government and the public about the Los Angeles to Anaheim Project Section. The Authority and FRA would work with the United States Army Corps of Engineers (USACE) and the United States Environmental Protection Agency (USEPA) to advance the recommended alternatives into the project-level environmental document. This process is shown in Figure ES-3.

ONGOING COMMUNITY ENGAGEMENT



Community engagement is an ongoing process that continually informs the development of the project.

Figure ES-3 Ongoing Community Engagement

1 Introduction

Section 1 at a Glance—In this section you will find the following information:

- ▶ Introduction
- ▶ Los Angeles to Anaheim Project Section Background
- ▶ California High-Speed Rail System Background
- ▶ Supplemental Alternatives Analysis Report – Purpose and Structure
- ▶ Consistency with Business Plan Objectives
- ▶ Collaborative Approach to Evaluation of Alternatives
- ▶ Agency and Community Outreach Input

The Authority is assessing alternatives for the high-speed rail section between Los Angeles and Anaheim to determine reasonable alternatives that merit detailed study in a project-level environmental document.¹ The two alternatives evaluated for the Los Angeles to Anaheim Project Section are shown in Figure 1.2-1. This document builds upon the AA Report issued for the corridor in April 2009 and the SAA Report issued in July 2010. The 2010 SAA Report was released in response to modifications to the alternatives and design options that were made as coordination with local cities and agencies progressed and additional engineering detail became available throughout 2009 and 2010. Since the 2010 SAA Report, comments have been received on the previous submissions of the SAA Report from stakeholders and the public.

This 2016 SAA Report presents the changes that have been made in response to those comments and new technical developments, including the emphasis in the Revised 2012 Business Plan, 2014 Business Plan, and Draft 2016 Business Plan on phased implementation of the High-Speed Rail System as a whole, and implementation of a blended system on the bookends that meets the goal of providing a one-seat ride from San Francisco to Los Angeles and Anaheim.²

Purposes of this SAA

Provide environmental and engineering information on a range of alternatives considered for the Los Angeles to Anaheim Project Section

Report how they either meet or do not meet the High-Speed Rail objectives and project purpose and need

Evaluate and disclose potential impacts

Recommend alternatives for further refinement and evaluation in the environmental review process or their withdraw from further consideration

1.1 California High-Speed Rail System Background

The California High-Speed Rail System is planned to provide intercity, high-speed rail service on over 800 miles of tracks throughout California, connecting the major population centers of Sacramento, the San Francisco Bay Area, the Central Valley, Los Angeles, the Inland Empire, Orange County, and San Diego. The High-Speed Rail System is envisioned as a state-of-the-art, electrically powered, high-speed, steel-wheel-on-steel-rail technology, including state-of-the-art safety, signaling, Automatic Train Control, and Positive Train Control. The trains would be capable of operating at speeds of over 200 miles per hour

¹ By preparing this alternatives analysis, the Authority is not waiving any rights it may have related to Surface Transportation Board jurisdiction and regulation of this proposed project under the Interstate Commerce Commission Termination Act of 1995, including that Act's preemptive effect on CEQA.

² California High-Speed Rail Program Revised 2012 Business Plan, April 2012. California High-Speed Rail Authority

(mph) along a fully grade separated alignment, with an expected non-stop travel time between Los Angeles Union Station and San Francisco of two hours and forty minutes.

The High-Speed Rail System is to be planned, designed, constructed, and operated under the direction of the Authority, a nine-member state governing board formed in 1996. The Authority's statutory mandate is to develop a High-Speed Rail System that is coordinated with the state's existing transportation network, including intercity rail and bus lines, regional commuter rail lines, urban rail and bus transit lines, highways, and airports.

1.2 Los Angeles to Anaheim Project Section Background

The Los Angeles to Anaheim Project Section of the High-Speed Rail System would extend approximately 30 miles, starting at LAUS and continuing south to ARTIC in Anaheim. This corridor runs through a narrow and constrained urban environment, with other rail operators in the area, including trains run by the National Railroad Passenger Corporation (Amtrak), the Southern California Regional Rail Authority (Metrolink), the Union Pacific Railroad (UPRR), and the Burlington Northern Santa Fe (BNSF) Railway.

The Authority, in cooperation with the Federal Railroad Administration (FRA), completed the *California High-Speed Train Program EIR/EIS* in November 2005, which included the analysis and identification of alignment and station locations throughout the State. Following a review of a range of alternatives to meet the growing demand for intercity travel in California, the High-Speed Rail System alternative was identified as the environmentally preferred alternative under NEPA as well as the environmentally superior alternative under CEQA. At the conclusion of the *California High-Speed Train Program EIR/EIS*, the Authority and FRA selected corridor alignments and station locations to carry forward for more detailed analysis in project-level environmental studies. The Authority and FRA selected the existing Los Angeles to San Diego Passenger Rail Corridor (LOSSAN Corridor) with a goal of sharing the existing right-of-way as the alignment for this section for further study in a project-level environmental document. The 351-mile LOSSAN Corridor is the second busiest intercity passenger rail corridor in the nation. The corridor is utilized by multiple public and private operators and is governed by member agencies, known as the LOSSAN Joint Powers Authority (JPA), and managed by the Orange County Transportation Authority (OCTA).

The Authority and FRA also selected station locations at Los Angeles Union Station (LAUS), Norwalk / Santa Fe Springs, Anaheim, and Irvine to study further as part of the Los Angeles to Anaheim Project Section project-level environmental document. In March 2007, the publicly circulated Notice of Preparation (NOP) and the Federal Railroad Administration's (FRA) Notice of Intent (NOI) stated that the Los Angeles to Orange County project-level environmental document would only consider high-speed rail service between LAUS and Anaheim. High-speed rail service beyond Anaheim to Irvine may be considered separately in the future.

The Authority and FRA initiated project-level environmental review for the Los Angeles to Anaheim Project Section in 2007, engaged in project scoping, and completed a preliminary AA Report in 2009 and SAA Report in 2010.

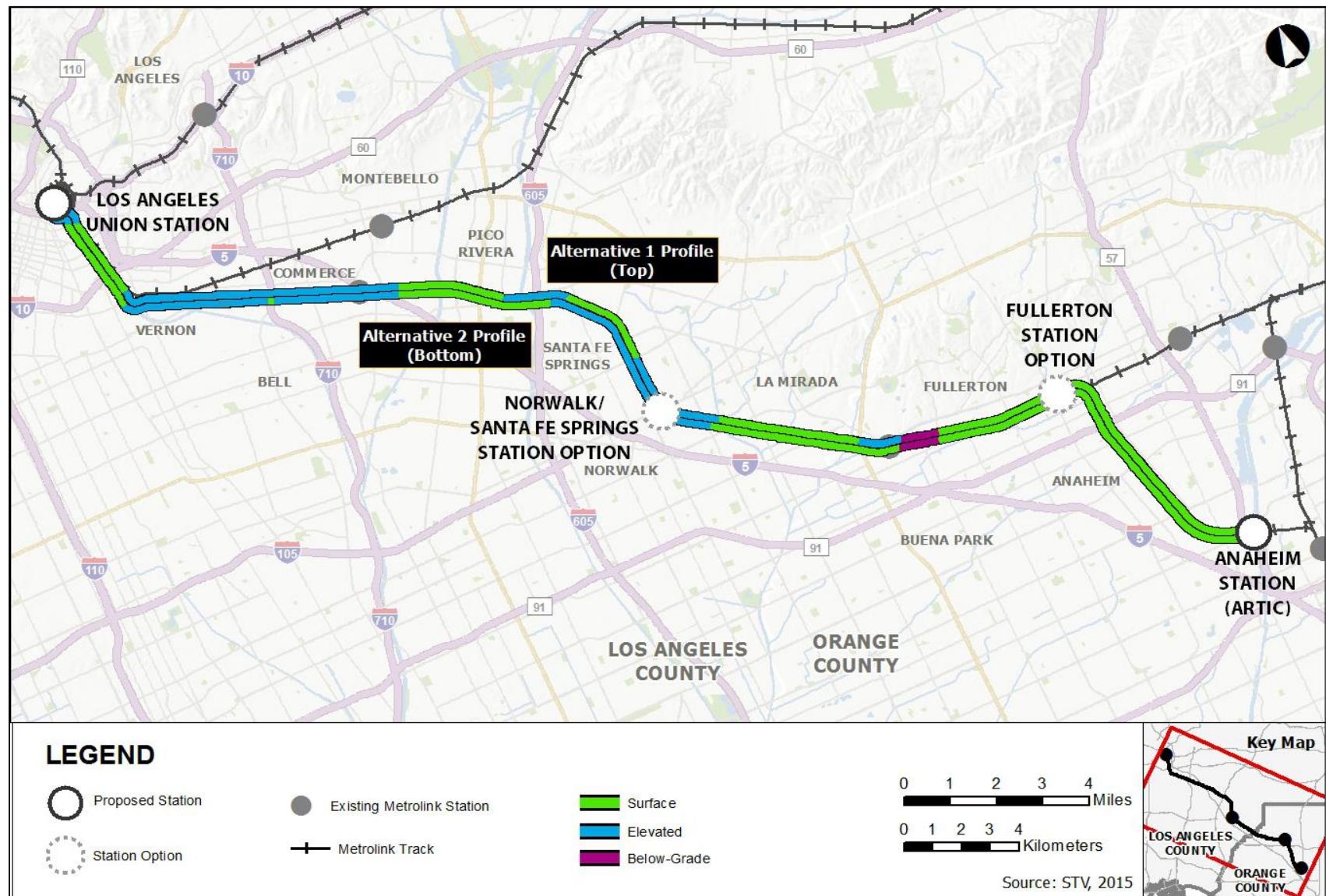


Figure 1.2-1 Los Angeles to Anaheim Project Section – Route and Station Locations

The *California High-Speed Train Program EIR/EIS* evaluated two alignments for the Los Angeles to Anaheim Project Section: LOSSAN Corridor and the Union Pacific Santa Ana Branch. The Authority and FRA selected and advanced the LOSSAN Corridor to Los Angeles to Anaheim project-level analysis (see Appendix C). The conceptual track alignment configuration defined in the *California High-Speed Train Program EIR/EIS* was two tracks for passenger rail services and two tracks for freight between Los Angeles and Fullerton. South of Fullerton the alignment was proposed to be two tracks for high-speed rail and conventional passenger rail operations shared with occasional freight trains.

The 2009 Alternatives Analysis for this corridor analyzed Dedicated, Expanded Shared Track, and Program Level Shared Track alternatives. A station option at Fullerton was added and analyzed in the 2009 Alternatives Analysis. As mentioned above, the Authority is not currently considering high-speed rail service beyond Anaheim to Irvine and therefore it was not considered in the AA report. The 2009 AA advanced the Dedicated Alternative for further analysis and dropped the Expanded Shared-Track and Program Level Shared-Track Alternatives.

The 2010 SAA accounted for changes in design criteria and added the Expanded Shared-Track Alternative (renaming it the Consolidated Shared-Track Alternative) to be analyzed alongside the Dedicated Alternative. Both alternatives were advanced. Table 1.2-1 provides a summary of the alignment and station options, introduced, evaluated, eliminated or carried forward through the alternatives analysis process.

Table 1.2-1 Los Angeles to Anaheim Project Section Alternatives

Option	Introduced	Eliminated or Carried Forward
Alignment Options		
Alternative 1	2009 AA	Eliminated in this 2016 SAA
Alternative 2	2010 SAA	To be carried forward
Station Options		
LAUS	2009 AA	To be carried forward
Norwalk/Santa Fe Springs	2009 AA	To be carried forward
Fullerton	2009 AA	To be carried forward
ARTIC	2009 AA	To be carried forward

1.3 Supplemental Alternatives Analysis Report – Purpose and Structure

This 2016 SAA Report uses preliminary planning, environmental, and engineering information to identify a reasonable range of alternatives for further refinement and evaluation in the environmental review process. This 2016 SAA Report documents the application of project evaluation criteria to recommend which alternatives should be carried forward and which alternatives should not be carried forward.

The following section (Section 2) describes the process used to evaluate alternatives in this 2016 SAA Report. Each of the project alternatives is described in detail in Section 3, and evaluated in Section 4.

1.4 Project Purpose and Need and Objectives

The Authority's purpose is to plan, build, and operate a High-Speed Rail System coordinated with California's existing transportation network. This increases access and mobility, provides better connections, and closes existing gaps among regional rail, transit commuter rail, intercity rail and bus lines, highways, and airports. This SAA compares the proposed alternatives against the Authority's adopted Purpose and Need as described in the 2005 EIR/EIR, described below:

The purpose of the statewide [High-Speed Train] HST system is to provide a reliable high-speed electric-powered train system that links the major metropolitan areas of the state, and that delivers predictable and consistent travel times. A further objective is to provide an interface with commercial airports, mass transit, and the highway network, and to relieve capacity constraints of the existing transportation system as increases in intercity travel demand in California occur, in a manner sensitive to and protective of California's unique natural resources (Authority and FRA 2005).

Objectives for the Proposed High-Speed Rail System

Provide intercity travel capacity to supplement critically overused interstate highways and commercial airports.

Meet future intercity travel demand that present transportation systems will not meet and increase capacity for intercity mobility.

Maximize intermodal transportation opportunities by locating stations in areas with good access to local mass transit or other modes of transportation.

Improve the intercity travel experience for Californians by providing comfortable, safe, frequent, and reliable high-speed travel.

Provide a sustainable reduction in travel time between major urban centers.

Increase the efficiency of the intercity transportation system.

Reduce potential impacts on communities and the environment by having the alignment follow existing transportation or utility corridors to the extent feasible.

Develop a practical and economically viable transportation system that can be implemented in phases and generate revenues in excess of operations and maintenance costs.

Provide intercity travel in a manner that minimizes urban sprawl, is sensitive to and protective of the region's natural resources, and reduces emissions and vehicle miles traveled for intercity trips.

Preserve wildlife corridors and mitigate potential impacts to wildlife movement where feasible to limit the extent to which the system may present an additional barrier to wildlife's natural movement.

The purpose of this project is to implement the Los Angeles to Anaheim Project Section of the California High-Speed Rail System to provide the public with electric-powered high-speed rail service. This service would provide predictable and consistent travel times between major urban centers and connectivity to airports, mass transit, and the highway network in the Los Angeles-Orange counties metropolitan region, and connects to the rest of the system.

Objectives for the Proposed Los Angeles to Anaheim High-Speed Rail Project Section

Improve mobility by relieving the mounting capacity and congestion constraints on Interstate 5 and surrounding freeways through providing a choice of high-speed train transportation mode.

Improve mobility by relieving the capacity and congestion constraints at Los Angeles International Airport, John Wayne Airport, and other Los Angeles area airports through providing a choice of a high-speed train transportation mode.

Reduce the capacity constraints and congestion on freight and passenger rail infrastructure along the LOSSAN corridor by providing a choice of a high-speed train transportation mode.

Maximize connectivity and accessibility for passenger rail and transit at LAUS, ARTIC, and an optional intermediate station in Norwalk / Santa Fe Springs or Fullerton.

Provide a sustainable reduction in travel time between Los Angeles and Anaheim.

Provide a high-speed rail alignment that is feasible in terms of engineering challenges and right-of-way constraints.

Minimize disruptions to neighborhoods and communities along the corridor by minimizing right-of-way acquisitions, project design effects, and/or potential for affecting community resources.

Preserve environmental quality and protect sensitive environmental resources by reducing emissions and vehicle miles traveled for intercity trips in Los Angeles and Orange Counties, and resources adjacent to the LOSSAN corridor.

Maximize the ridership/revenue potential for Los Angeles and Orange Counties by providing reliable high-speed rail operation.

Minimize capital and operation costs related to construction, operations, and maintenance of the Los Angeles to Anaheim Project Section of the High-Speed Rail System.

1.5 Consistency with Business Plan Objectives

1.5.1 Business Plan

The Authority publishes a business plan according to statute every two years that serves as the foundational document for implementing the state's High-Speed Rail System. The plan includes progress to date, updates information and forecasts and identifies key milestones and decisions. It includes a description of the proposed service, expected patronage, operating and maintenance costs, anticipated costs and funding, environmental and construction schedules for the Phase 1 segments and program risks.

1.5.2 Previous Business Plans

In 2012, the Authority adopted its 2012 Business Plan that laid out a new framework for implementing the California High-Speed Rail System in concert with other state, regional and local rail investments, as part of a broader statewide rail modernization program. In that same year, the Legislature approved – and Governor Brown signed into law – Senate Bill 1029 (Budget Act of 2012) approving almost \$8 billion in federal and state funds for the construction of the first high-speed rail investment in the Central Valley and 15 bookend and connectivity projects throughout the state. In 2014, the Authority adopted its 2014 Business Plan which built on and updated the 2012 Business Plan, implementing the requirements of Senate Bill 1029.

The Authority issued a Draft 2014 Business Plan on February 7, 2014, received and considered public comments, and published the 2014 Business Plan on April 30, 2014. The 2014 Business Plan:

- Updated forecasts and estimates informed by rigorous external scrutiny
- Introduced a risk-based breakeven analysis that continued to show financial viability
- Confirmed that the system will be an attractive private sector investment opportunity

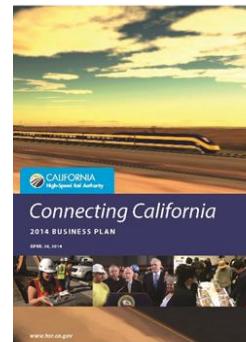


Figure 1.5-1 2014 Business Plan

1.5.3 Draft 2016 Business Plan

On February 18, 2016, The Authority released its Draft 2016 Business Plan for a 60-day public comment period. At this time, the comment period is open and the Authority Board is anticipated to take up adoption of the 2016 Business Plan at its April 21, 2016 meeting.

The Draft 2016 Business Plan has three fundamental objectives:

- First, initiate high-speed rail passenger service as soon as possible, which will demonstrate the benefits of the project and begin generating revenues to then attract private sector participation and help fund extending the system beyond an initial line.
- Second, make strategic, concurrent investments throughout the system that will be linked together over time. By making discrete investments that connect state, regional and local rail systems, the project can provide immediate mobility, environmental, economic and community benefits. Together these prepare a solid foundation for high-speed rail and provide for early implementation of projects that will be required for high-speed rail construction. The Authority will enter into partnering agreements with other transportation providers, aggregate federal, state and local funding sources and advance regional planning and coordination. This approach will yield the best and fastest results.
- Third, position the Authority to construct additional segments as funding becomes available. This requires completing the required environmental analyses for every mile of the program and securing environmental approvals as soon as possible. Additionally, environmental clearance positions concurrent investments in blended corridors for funding ahead of full segment implementation.

1.5.4 Difference between 2014 and 2016 Business Plan

Following are the differences between the 2014 and 2016 Business Plans:

- Funding - The funding authorized by the Governor and Legislature, by the federal government and the people of California is sufficient to deliver a high-speed rail line connecting the Silicon Valley to the Central Valley
- Schedule – The Authority now projects starting passenger service on the Silicon Valley to the Central Valley line in 2025 instead of on a line between Merced and the San Fernando Valley in 2022
- Cost Estimates – The capital cost estimates for building the Phase 1 system between San Francisco/Merced and Los Angeles/Anaheim are lower than prior estimates

1.5.5 SAA Consistency with the Business Plan

The alternatives considered in this SAA are consistent with the goals and objectives laid out in the Draft 2016 Business Plan and previously iterated in the 2014 Business Plan. Advancing the environmental clearance of the program allows the program to be construction-ready which will maximize flexibility to capture new funding opportunities. Additionally, it will provide greater certainty about route and station locations to help local communities and transport partners with their planning decisions.

The Los Angeles to Anaheim alternatives will utilize a blended service approach to connect Los Angeles and Orange Counties by traveling from Los Angeles Union Station to the Anaheim Regional Transportation Intermodal Center (ARTIC) in a shared corridor using the existing Los Angeles-San Diego-San Luis Obispo (LOSSAN) rail corridor. Benefits will be multiplied by investing in core capacity for passenger rail service in the urban core that improves safety and efficiency of existing passenger and freight rail service while paving the way for high-speed rail and allows for growth in both future passenger and freight in this key commuter and trade corridor.

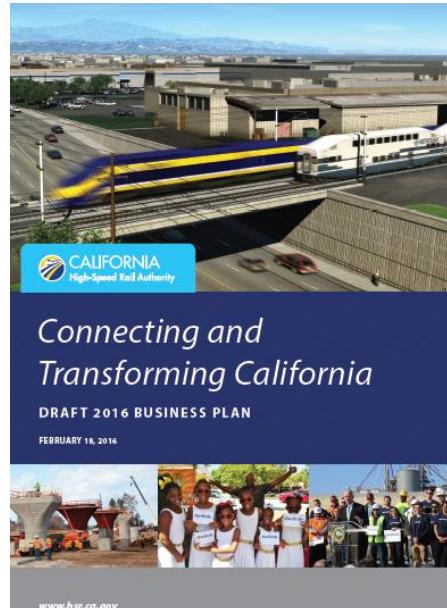


Figure 1.5-2 Draft 2016 Business Plan

1.6 Collaborative Approach to Evaluation of Alternatives

This SAA documents how each of the alternatives meets the Purpose and Need for the project. This SAA also describes how evaluation measures applied through a collaborative process helped the Authority determine recommendations for alternatives to be carried forward for environmental analysis and which did not meet the evaluation measures and will not be carried forward for further analysis.

The SAA process is intended to provide the Authority and the FRA with sufficient information and documentation on how evaluation measures and criteria have been applied to potential alternatives to optimize project objectives, minimize potential environmental impacts, and identify project information from the communities along the corridor. Figure 1.6-1 shows the collaborative approach to the alternatives evaluation.

The three key areas of the collaborative approach are listed below. The detailed criteria applied for Project Objectives and Environmental Resources are described in Section 2.2. The detailed feedback from the community is described in Section 1.7. The application of the criteria and community feedback are presented in Section 3.4.

1.6.1 Community

The Authority developed and is implementing an intensive community engagement program to support the development of alternatives for study during the environmental process. This program will ultimately inform the selection of a preferred alternative. To date, more than 450 meetings, briefings, and presentations have been held since 2010; Appendix B provides a summary matrix of these meetings. The feedback received was incorporated into the balancing process defined above and further described in Section 1.7.

1.6.2 Environmental Resources

The evaluation of environmental resources are guided by federal laws, state laws, and local considerations. These laws and regulations protect natural resources and inform decision makers and the public about potential environmental effects of a project. Feedback from community members and local stakeholders helped focus attention on appropriate environmental resources of concern. Environmental resources are mostly governed by agencies responsible for protecting these resources and are listed in Section 2.2.2.



The alternative development process seeks to balance project objectives, natural resources, and community character.

Figure 1.6-1 Collaborative Approach

Some of the major considerations heard through the collaborative approach process

- ▶ Safety and security
- ▶ Noise and vibration
- ▶ Traffic
- ▶ Air Quality
- ▶ Aesthetics
- ▶ Light pollution

1.6.3 Collaborative Approach Results

The Los Angeles to Anaheim Project Section public outreach program for this 2016 SAA Report had the following objectives:

- Develop and refine project alternatives with key stakeholders along the LOSSAN corridor with the goal of minimizing impacts to the surrounding communities.
- Create a collaborative environment in which partner agencies and corridor cities can provide information and input to help shape the final alignment alternatives.

A Memorandum of Understanding (MOU) was signed between the Authority and the Gateway Cities Council of Governments in February 2010, representing the cities of Vernon, Bell, Commerce, Montebello, Pico Rivera, Santa Fe Springs, Norwalk and La Mirada. The goal of the MOU was to expand the cooperation and coordination between the cities and the Authority in order to develop design options that best suit the local community.

To support the Authority's technical efforts, stakeholders were engaged in the project via briefings, presentations, workshops, activity centers, station design charrettes and media. Stakeholders' ideas, concerns and comments are incorporated in the findings of this 2016 SAA Report.

Corridor cities were unanimous in voicing significant concern and opposition related to the impacts associated with Alternative 1 and continued working with the Authority to develop a more palatable option, resulting in the currently proposed Alternative 2. Cities along the corridor remain concerned about local impacts, especially property acquisitions, visual and noise impacts and the need to coordinate with existing transportation and public works projects underway in each city currently and in the future. See Section 1.7 for a more detailed summary of stakeholder engagement.

To date, the outreach efforts have included meeting with various community organizations that represent environmental justice (EJ) communities. Although environmental justice impact analysis has not yet been initiated, these initial outreach meetings with EJ community representatives have informed the approach that will be implemented for EJ impact analysis in the project-level environmental document. EJ community organizations that have been engaged, though have not yet been formally consulted at this point.

Appendix B provides a summary matrix of these meetings.

In March 2011, the Authority initiated the development and study of a phased implementation plan for the Los Angeles to Anaheim Project Section based on stakeholder feedback. This phased implementation plan includes early improvements, such as constructing grade separations, prior to the introduction of high-speed rail service in the corridor. A phased implementation approach would bring early benefits to existing rail service customers and would enhance safety and mobility for the local regions.

1.7 Agency and Community Outreach and Input

Agency and community input is critical to the development and refinement of the alternatives and helps determine how design options and alternatives can avoid or mitigate potential impacts. The public outreach program engaged federal, state, local organizations, and individuals using a variety of tactics as described in this section.

1.7.1 Community Engagement

The Authority recognizes that the individuals most knowledgeable about any given community are the members within the community. To this end, outreach for the Los Angeles to Anaheim Project Section over the past few years has primarily focused on working with staff from the corridor cities including Los Angeles, Vernon, Commerce, Bell, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Buena Park, Fullerton and Anaheim, as well as partnering with government agencies and updating state

and federal district legislative offices. Discussions have focused on improving the relationship between the Authority and these key partners and refining the design concepts being considered in the Supplemental Alternatives Analysis (SAA). These initial meetings have helped shape the alternatives and reduce the impacts of the project.

Since the completion of the 2010 SAA, the Authority has held more than 450 individual and group meetings about the alternatives described in Section 3 of this document and summarized in Appendix B. As described in detail below, these meetings have included: corridor city and agency briefings, open houses, technical working groups, community & business presentations and information tables. These community engagement activities help share information, gather input, hear concerns, and identify potential alignment refinements.

Table 1.7-1 Community Meetings since Summer 2010

Date	Meeting Format	Number of Meetings
2010		
Summer through Fall	TAC/TWG	18
Summer through Fall	AS	49
2011		
All Year	TAG/TWG	14
All Year	AS	37
2012		
All Year	AS	15
Summer through Fall	TAG/TWG	4
2013		
All Year	TAG/TWG	5
All Year	AS	19
2014		
Through September	TAG/TWG	7
All Year	AS	16
2015		
All Year	AS	33
Fall	Open House	6

Technical Advisory Group/Technical Working Group (TAG/TWG); Agency Staff Coordination (AS).

Throughout this period of discussion with stakeholders, the Los Angeles to Anaheim team gathered feedback regarding the technical aspects of the proposed alignments and station options and answered general questions on the statewide and section-specific process. The comments received at these meetings were collected and considered during the development of this document and the alternatives presented herein. These comments will be used during the environmental review and will continue to be considered in the design refinement process moving forward. A comprehensive database containing all comments received during the project development process is kept by the Authority and regularly used during the development of alternatives to facilitate the review of community issues in conjunction with the review of project objectives and natural resources.

Stakeholder comments covered a wide range of topics including, but not limited to:

- ▶ Bicycle/pedestrian
- ▶ Business resources
- ▶ Connectivity
- ▶ Consistency with other plans
- ▶ Construction issues
- ▶ Earthquakes
- ▶ Eminent domain
- ▶ Engineering design
- ▶ Environmental process
- ▶ Funding
- ▶ Future development plans
- ▶ Grade crossings
- ▶ Health
- ▶ Historic architectural resources
- ▶ Land acquisition
- ▶ Legal/litigation
- ▶ Mitigation
- ▶ Noise/vibration
- ▶ Operational issues
- ▶ Property values
- ▶ Ridership
- ▶ Right-of-way
- ▶ Schools and houses of worship
- ▶ Station design
- ▶ Technology
- ▶ Traffic
- ▶ Visual resources

1.7.2 Summary of Community Open House Meetings

In order to update the public on the project, share the alternatives developed in this 2016 SAA and collect additional feedback, the Authority held five community open houses in October 2015 for the Los Angeles to Anaheim Project Section. The Authority presented the refined alternatives brought about by the review of community input and balancing of project objectives, natural resources, and community character.

The Authority used the feedback received during these meetings to continue to develop the alternatives under study. A summary of those meetings is provided below.

Meeting Title: 2015 SAA Update

Duration: October 15 – November 10, 2015

Number of meetings: 6

Total Attendees: Approximately 289

Meeting Format: Open House and Presentation

- ▶ Information provided through staffed topic specific stations and presentation.
- ▶ One-on-one dialogue between the community and technical staff
- ▶ Discussed the latest project updates and answered stakeholder questions.
- ▶ Language interpreters were made available at all meetings based on language needs identified through U.S. Census data.
- ▶ One of the meetings was conducted in Spanish and English.
- ▶ One of the meetings offered a live webcast.

Meeting Recap

- ▶ Attendees requested information about station design and encouraged connectivity with regional transit providers to maximize access by transit.
- ▶ Concerns were raised on construction and operations noise and vibration impacts on residences, communities, and other sensitive receptors along the corridor.
- ▶ Several comments expressed relief over the proposed alignments along the LOSSAN corridor allowing the majority of the new tracks to remain within the ROW, concerns over indirect impacts to properties were raised.
- ▶ Concern over the impacts to properties near the existing Metrolink stations were raised, particularly if additional land or modifications to the existing area are needed for the optional high-speed rail stations in Norwalk/Santa Fe Springs and Fullerton.
- ▶ Commenters wanted to ensure effective grade and rail line separation. Concerns over the construction impacts were raised but the long term traffic benefits were also acknowledged.
- ▶ Concerns related to rail crossing safety and support for a fully sealed corridor. Commenters also raised passenger safety concerns, particularly on a transportation method that is traveling at such high speeds.

Meeting Location Details

- ▶ October 15: ARTIC, 2626 East Katella Ave, Anaheim, CA 92806
- ▶ October 17: Rivera Park, 9530 Shade Ln, Pico Rivera, CA 90660
- ▶ October 21: Norwalk Arts & Sports Complex, Sproul Room, 13200 Clarkdale Ave, Norwalk, CA 90650
- ▶ October 26: Fullerton Library, 353 West Commonwealth Ave, Fullerton, CA 92832
- ▶ October 28: Buena Park Community Center, 6688 Beach Blvd, Buena Park, CA 90621
- ▶ November 10: LAUS Fred Harvey Room, 800 N Alameda St, Los Angeles, CA 90012

1.7.3 Summary of Local Agency and Technical Working Group Meetings

Following the 2010 SAA, more detailed working sessions were held with agency stakeholders to discuss the nuances of track alignments and possible design modifications with the goal of minimizing impacts.

All meetings provided information about the project and aimed to collect information about existing conditions and local preferences. At these meetings the project team also coordinated with local jurisdictional staff on current and future projects in the area in an effort to deepen the understanding of key issues and community concerns. Key characteristics, concerns, and related projects collected during these meetings are presented in Table 1.7-2.

Table 1.7-2 Key Community Characteristics, Concerns, and Project Coordination

Community Issues	
City of Los Angeles	
Characteristics	Residential, commercial, and civic uses. Tight-knit community within the greater setting of urban Los Angeles. Unique social/demographic make-up of the community with an important heritage and many significant cultural resources.
Concerns	Right of way requirements, impacts to cultural resources, connectivity within the community.
Project Coordination	Coordination with local projects includes the Metro Regional Connector, LAUS Master Plan, SCRIP, LA River Project, Metro West Santa Ana Branch.
City of Vernon	
Characteristics	Highly urban and heavy industrial communities, emphasis on business.
Concerns	Maintaining access to businesses, tax bases, right of way requirements, grade separation impacts, effects on local streets.
Project Coordination	Coordination with local projects includes the I-710 project and Metro West Santa Ana Branch.
City of Bell	
Characteristics	Minimal impact in City, city boundary borders rail corridor for less than ½ a mile.
Concerns	Right of way requirements, potential impacts to existing warehouses.
Project Coordination	Coordination with local projects includes Metro West Santa Ana Branch and roadway improvements.
City of Commerce	
Characteristics	Highly urban and heavy industrial communities, emphasis on business.
Concerns	Maintaining access to businesses, preserving tax base, right of way requirements, effects on local streets, impacts to Commerce Metrolink Station, noise/vibration, environmental justice.
Project Coordination	Coordination with local projects includes the I-710 project, Hobart Yard, I-5 Project.
City of Montebello	
Characteristics	Intersection of residential neighborhoods to the north and commercial properties to the south.
Concerns	North /south connectivity in the city across the railroad corridor, noise / vibration / aesthetics for the residential area to the north of the railroad corridor, aerial alignments
Project Coordination	Coordination with local projects includes the Metro Gold Line Eastside Extension.
City of Pico Rivera	
Characteristics	Mixed used community with pockets of commercial properties interspersed alongside residential neighborhoods.

Table 1.7-2 Key Community Characteristics, Concerns, and Project Coordination

Community Issues	
Concerns	Grade separation impacts, noise / vibration / aesthetics for the residential areas bordering the rail corridor, right of way requirements, bike path connectivity to the San Gabriel River & Rio Hondo trails.
Project Coordination	Coordination with local projects includes the Metro Gold Line Eastside Extension.
City of Santa Fe Springs	
Characteristics	Highly industrial land uses and existing Metrolink station.
Concerns	Maintaining access to businesses, tax base, right of way requirements, potential high-speed rail station and associated benefits / impacts, congestion /additional traffic on local streets.
Project Coordination	Joint coordination with City Staff from both the City of Santa Fe Springs and Norwalk regarding proposed optional high-speed rail station, Rosecrans /Marquardt Grade Separation, I-5 Widening Project.
City of Norwalk	
Characteristics	Industrial land uses to the northeast, largely residential neighborhoods and commercial uses to the southwest. Existing Metrolink station.
Concerns	Congestion /additional traffic on local streets, potential high-speed rail station and associated benefits / impacts, noise / vibration / aesthetics for areas bordering the rail corridor
Project Coordination	Joint coordination with City Staff from both the City of Norwalk and of Santa Fe Springs regarding proposed optional high-speed rail station, Rosecrans /Marquardt Grade Separation, I-5 Widening Project, Metro Green Line East Extension.
City of La Mirada	
Characteristics	Intersection of residential neighborhoods to the north and commercial properties to the south.
Concerns	Impacts to local grade separations, noise / vibration for the residential neighborhoods to the north of the railroad corridor, potential soundwalls as mitigation if noise impacts are identified.
Project Coordination	Coordination with local projects includes the Rosecrans / Marquardt Grade Separation.
City of Buena Park	
Characteristics	A mostly residential community with high existing demand for transit.
Concerns	Reconstruction of existing Metrolink station, businesses/tax base, impacts to local grade separations, noise / vibration for the residential neighborhoods along the railroad corridor.
Project Coordination	Coordination for interface with the Buena Park Metrolink Station.
City of Fullerton	
Characteristics	Mixed use community with residential, commercial, and industrial uses around the existing Metrolink station.
Concerns	Potential high-speed rail station and associated benefits / impacts, right of way requirements, opportunities for partnership with the Authority on development.
Project Coordination	Coordination with Fullerton city staff regarding proposed optional high-speed rail station.
City of Anaheim	
Characteristics	Community encompassing both residential and historic residential neighborhoods and world class tourist attractions.

Table 1.7-2 Key Community Characteristics, Concerns, and Project Coordination

Community Issues	
Concerns	Coordination with city staff, ARTIC project team, treatment of existing at grade crossings along the rail corridor, right of way requirements.
Project Coordination	Coordination with local projects including ARTIC, ARC, Central Harbor Boulevard Transit Corridor Study, State College Grade Separation, and other related OCTA projects.

1.7.4 Summary of Regional Agency Activities

The Authority has continued to work with the Los Angeles County Metropolitan Transportation Authority (Metro) staff, Orange County Transportation Authority (OCTA) staff, and other county and regional representatives throughout the AA process. Since 2010, the Authority has met regularly with these agencies to ensure coordination between High-Speed Rail and other regional transportation projects, such as Southern California Regional Interconnection Project (SCRIP) and Metro Regional Connector in Los Angeles County and ARTIC in Orange County.

In addition to the County transportation authorities, the Authority has worked with other County and regional agencies as opportunities for coordination have arisen, such as the Los Angeles County Department of Public Works, Southern California Association of Governments (SCAG), the LOSSAN Joint Powers Authority (JPA), Metrolink and the Gateway Cities Council of Governments (GCCOG).

1.7.5 Record of Outreach Briefings

The Authority has continued to engage the communities along the Los Angeles to Anaheim Project Section. City staff, regional agency staff, and elected officials have been periodically briefed on the status of the Los Angeles to Anaheim Project Section. See Appendix B for a detailed list of outreach briefings and other outreach activities in the section since the 2010 SAA.

1.7.6 Summary of Corridor Community Activities

The Authority has held recurring meetings with stakeholders, communities, and local agencies across the Los Angeles to Anaheim Project Section. These meetings varied from one-on-one discussions to group settings and presentations. All meetings provided information about the project and aimed to collect information about existing conditions and current and future projects in the area in an effort to deepen the understanding of key issues of concern in each location. Key themes, concerns, and related projects collected during these meetings are presented in Table 1.7-2 while Appendix B summarizes the number and extent of meetings. An example of the format of community meetings is shown in Figure 1.7-1.



Authority staff address the attendees at the SAA Update meetings in Fullerton, Anaheim, Norwalk, and Pico Rivera (clockwise from top left).

Figure 1.7-1 Participation at SAA Update Meetings

2 Methodology

Section 2 at a Glance—In this section you will find the following information:

- ▶ **Alternatives Evaluation Process**
- ▶ **Evaluation Criteria Used**—Corridor alternatives are described and evaluated.
 - ◆ Project Purpose and Need/Project Objectives
 - ◆ High-Speed Rail Performance Criteria/Design Objectives
 - ◆ Environmental Impact and Feasibility/Practicability

The process used to define and evaluate alternatives in this 2016 SAA Report is described in the following sections.

2.1 Alternatives Evaluation Process

The approach to the preparation of this report involves the creation and refinement of alternatives through a series of iterative processes that are intended to compare alternatives. This study follows a defined alternative analysis process as described in the Technical Memorandum Alternatives Analysis Methods for Project EIR/EIS Version 3, adopted January 2011³ and the Project Environmental Impact Report/Environmental Impact Statement Environmental Methodology Guidelines Version 5, adopted June 2014.

The techniques used to gather information, develop and compare alternatives include:

Field Inspections of Corridors – The potential alignment, right-of-way (ROW), and station locations are the subject of field inspection by experienced planners, engineers, and analysts with experience in railroad operations, to identify conditions and factors not visible in aerial photos or on maps. Field inspections become progressively more detailed as the alternatives are refined by the planning and engineering work. As a result of these site visits, conceptual designs have become more detailed as the alternatives are refined.

Project Team Input and Review – The project team conducts internal meetings to discuss alternatives and local issues that potentially impact alignments.

Qualitative Assessment – A number of the qualitative measures used to describe the alternative alignments are developed by the project team. These measures include constructability, accessibility, operability, maintainability, ROW, public infrastructure impacts, railway infrastructure impacts, and environmental impacts.

Engineering Assessment – Alignment plans, profiles, and cross-sections were developed and then used for the Engineering Assessment. Engineering assessments are provided for a number of measures that can be readily quantified at this stage of project development. The engineering assessments can provide information on project length, travel time, and configuration of key features of the alignment such as the presence of existing infrastructure.

Conceptual Project Footprints – Quantitative and qualitative evaluation of the two alternatives is based on conceptual project footprints. These conceptual project footprints include: track area, potential station areas, potential traction power substation (TPSS) locations, potential maintenance of way facility (MOW) locations, potential light maintenance facility locations, potential radio tower locations, ROW requirements for new/modified grade separations, ROW requirements for affected third parties, potential temporary construction easement (TCE) locations, and other ancillary facilities for each of the two alternatives.

GIS Analysis – The bulk of the assessment is performed using geographic information system (GIS) data, which enables depictions of the project's interactions with a variety of measurable geographic features, both natural and built. GIS data is used to assess impacts on farmland, water resources, floodplains, wetlands,

³ While the 2016 Los Angeles to Anaheim SAA Report was being prepared, the Authority began working on updates to Version 3 of the Alternatives Analysis Methodology. This SAA is consistent with the intent of the updates to the Alternatives Analysis Methodology.

The techniques used to gather information, develop and compare alternatives include:

threatened and endangered species, cultural resources, current urban development, infrastructure, and oil and gas exploration and production using conceptual project footprints. To the extent possible, GIS analysis is informed by real-time site conditions that are observed through site visits within and adjacent to the project corridor.

2.2 Evaluation Criteria

Each alternative was evaluated based on a variety of criteria that include: ability to meet project purpose and need/most project objectives, environmental impacts, and considerations of feasibility per either NEPA or CEQA and practicability under Clean Water Act Section 404 to determine alternatives that merit further analysis and those that may be eliminated from further consideration. An alternative may be eliminated from detailed study if it is not practicable under Clean Water Act Section 404 and not feasible or reasonable per either NEPA or CEQA. An alternative may also be eliminated from further study if it is substantially similar to other alternatives recommended for study but offers no substantial environmental advantage.

The two alternatives considered in this 2016 SAA were evaluated based on criteria that include, but are not limited to, the criteria and examples listed below:

Project purpose and need/project objectives

High-Speed Rail AA evaluation measures (such as travel time and cost)

Land use (such as consistency with land use and general plans)

Constructability (such as track type construction and access to the corridor)

Community impacts (including displacements and relocation impacts)

Natural resources (such as impacts on wetlands, potential threatened and endangered species habitat, cultural resources, Important Farmlands, and parks and recreational resources)

Additional considerations (such as support by public agencies)

Alternatives are dropped from further consideration if they are neither reasonable, practicable, nor feasible. Major issues that could result in an alternative being dropped include:

Alternative does not meet the project Purpose and Need or most project objectives

Alternative has environmental or engineering issues that would make approvals or implementation infeasible

Alternative does not reduce or avoid one or more adverse environmental impacts relative to other alternatives retained for study

Alternative does not meet purpose and project objectives in providing a sustainable reduction in travel time between major urban centers⁴

Alternative is not feasible or practicable to construct

Alternative does not meet Business Plan objectives⁴

The following subsections describe the above criteria in further detail.

⁴ The purpose and need elements are defined as the system-wide objectives while the business plan defines operational parameters for long-term use of the system.

2.2.1 High-Speed Rail Performance Criteria and Design Objectives

Along with the Purpose and Need, project alternatives are evaluated using system performance criteria that address design differences and qualities, along with meeting the goals of the Revised 2012 Business Plan. Alignment and station performance objectives and criteria are described in Table 2.2-1.

Table 2.2-1 System Performance Objectives and Criteria

Objective	Criteria
Maximize ridership/revenue potential	Travel time Route length
Maximize connectivity and accessibility	Intermodal connections
Minimize operating and capital costs	Operations and maintenance issues and costs

Source: *Alternatives Analysis Methods for Project EIR/EIS, Version 3, October 2011, California High-Speed Rail Authority.*

2.2.2 Evaluation Measures

In addition to the High-Speed Rail objectives and criteria above, measures to evaluate and compare the project alternatives in terms of anticipated levels/types of environmental impact and potential feasibility/practicability are described in Table 2.2-2. Where it is possible to quantify the measure, estimates are provided, and where it is not possible to quantify effects, qualitative assessments are provided.

Table 2.2-2 High-Speed Rail Alternatives Analysis Evaluation Measures

Measurement	Method	Source
A. Land use supports transit use and is consistent with existing, adopted local, regional, and state plans, and is supported by existing or future growth areas as measured by:		
Development potential for Transit Oriented Development (TOD) within walking distance of station	Identify existing and proposed land uses within 1/2-mile of station locations. Identify if there are TOD districts, TOD overlay zones, mixed use designations, or if local jurisdiction have identified station areas for redevelopment or economic development	Regional and local planning documents and land use analysis and input from local planning agencies
Consistency with other planning efforts and adopted plans	General analysis of applicable planning and policy documents	Land Use Analysis and input from planning agencies
B. Construction of the alternative is feasible in terms of engineering challenges and right-of-way constraints as measure by:		
Constructability, access for construction; within existing transportation or public ROW	Extent of feasible access to alignment for construction	Conceptual design plans and maps
Disruption to existing railroads	Right-of-way constraints and impacts on existing railroads	Conceptual design plans and maps
Disruption to and relocation of utilities	Number and type of utilities crossed, (gravity/pressure, private or public owned)	Conceptual design plans and maps
C. Minimizes disruption to neighborhoods and communities – extent to which an alternative minimizes right-of-way acquisitions, minimizes dividing an established community and minimizes conflicts with community resources.		

Table 2.2-2 High-Speed Rail Alternatives Analysis Evaluation Measures

Measurement	Method	Source
Displacements	If possible, estimate number of properties by land use type that would be displaced. Or acres of land within the right-of-way/station footprint, by type of land use: single family, multifamily, retail/commercial, industrial, etc.	Identified by comparing the alignment conceptual design drawings with aerial photographs, zoning maps, and General Plan maps.
Property with Access Affected	Estimate number of potential locations along the alignments or at station locations where, and extent to which, access would be affected.	Conceptual design plans and aerial photographs.
Proximity to Schools	Consistent with PRC Section 21151.4, identify the location of schools within a 0.25 mile on either side of the construction footprint.	Conceptual design plans, aerial photographs, and school district websites.
Proximity to Landfills	Consistent with Title 27 of the CCR, identify the location of landfills within a 0.25 mile on either side of the construction footprint.	Conceptual design plans and aerial photographs.
Proximity to Section 4(f) Resources	Identify protected parks, wildlife refuges or historical sites to determine if a permanent, temporary or constructive use would likely occur.	Conceptual design plans, regional and local planning documents, regional and local park or recreation websites, school district websites, and aerial photographs.

D. Minimizes impacts to environmental resources - extent to which an alternative minimizes impacts on natural resources are measured by:

Waterways and wetlands and natural preserves or biologically sensitive habitat areas affected	Identify new rail bridge crossings required; rough estimate of acres of wetlands, width of waterways crossed; acres and species of threatened and endangered habitat affected; acres of natural areas/critical habitat affected.	
Cultural Resources	Identify locations of National Register of Historic Places or California Historical Resources Information System listed properties. For archaeological resources identify areas of high or moderate sensitivity based on previous studies conducted in the study area.	Based on conceptual design plans, aerial photographs, and GIS layers; cultural resource records search and surveys
Parklands	Estimate number and acres of parks that could be directly and indirectly affected. This would also include major trails that would be crossed.	Conceptual design plans, GIS layers, city planning documents, and aerial photography
Agricultural Lands	Estimate acres of prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance within preliminary limits of disturbance.	Conceptual design plans and GIS layers

E. Enhances environmental quality — extent to which an alternative minimizes impacts on the natural and urban environment as measured by:

Noise and Vibration effects on sensitive receivers	Identify types of land use activities that would be affected by high-speed rail pass-by noise and ground vibration.	Results of screening level assessment: inventory of potential receivers from site survey and aerial maps
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Table 2.2-2 High-Speed Rail Alternatives Analysis Evaluation Measures

Measurement	Method	Source
Change in visual/scenic resources	Identify number of local and scenic corridors crossed and scenic/visual resources that would be affected by high-speed rail elevated structures in scenic areas and shadows on sensitive resources (parks). Identify locations where residential development is in close proximity to elevated high-speed rail structures.	Result of general assessment; survey of alignment corridors and planning documents from local and regional agencies.
Maximize avoidance of areas with geological and soils constraints	Identify number of crossings of known seismic faults, estimate acres of encroachment into areas with highly erodible soils, acres of encroachment into areas with high landslide susceptibility.	United States Geological Survey maps and available GIS data; CA Dept. of Conservation's California Geologic Survey, Regional Geologic Hazards & Mapping Program, check Map Index to identify maps appropriate for high-speed rail sections
Maximize avoidance of areas with potential hazardous materials	Identify hazardous materials/waste areas to avoid constraints	Data from previous records search conducted for other projects within study area.

Source: Alternatives Analysis Methods for Project EIR/EIS, Version 3, October 2011, California High-Speed Rail Authority.

In accordance with Section 4(f) of the U.S. Department of Transportation Act, this 2016 SAA takes into specific consideration the presence of 4(f) resources. Section 4 and Appendix A identify resources along the alignment that may qualify for 4(f) protection.

Section 4(f) of the U.S. Department of Transportation Act (49 U.S.C. Section 303) is a federal law that limits the use of certain parks, recreation areas, refuges and historic properties for transportation projects. Section 4(f) applies to transportation projects that require funding or other approvals by any USDOT agency, including FRA.

Section 4(f) states that land from a publicly owned park, recreation area, wildlife or waterfowl refuge, or a significant historic site can be used for a transportation project only if (1) there is no feasible and prudent alternatives to the use of these resources and all possible planning has been taken to minimize harm to the resource, or (2) the use would result in a de minimis impact on the Section 4(f) property. A finding of de minimis impact requires concurrence of the official with jurisdiction over the Section 4(f) property.

For purposes of this Alternatives Analysis, FRA and the Authority have sought to identify potential Section 4(f) uses for each of the alternatives considered, based on the information available at this stage of the study. This analysis includes the use of a Geographic Information System (GIS) that incorporates existing data regarding locations of known parks, recreation areas, refuges, and historic sites. Field work to identify and evaluate potential Section 4(f) resources has not yet been completed. In addition, engineering at this stage is not advanced sufficiently to determine the extent of potential impacts on these resources from a Section 4(f) perspective.

The potential 4(f) impacts have been pointed out in this document to advance the project design and work to avoid and/or minimize impacts to these resources going forward. This also allows the Authority to begin planning with resource owners to minimize harm to these resources, if needed.

After FRA and the Authority select a range of alternatives for detailed study, a full and complete Section 4(f) analysis will be completed for this project. As part of that analysis, determinations may change regarding the Section 4(f) status of properties considered in this report and additional Section 4(f) properties may be identified. In addition, more detailed information will be developed regarding the alternatives' effects on Section 4(f) resources. Where necessary, alternatives to avoid, minimize, and mitigate impacts on Section 4(f) resources will be considered. This analysis will be included in the Draft EIS/EIR.

3 Description of Alternatives

Section 3 at a Glance—In this section you will find the following information:

- ▶ Development of Alternatives
- ▶ Current and Projected Conditions of LOSSAN Corridor
- ▶ No Project Alternative
- ▶ Project Alternatives
- ▶ Stations

Three alternatives for the Los Angeles to Anaheim Project Section are described in this section:

- No Project Alternative
- Project Alternative: Alternative 1 (previously known as the Dedicated High-Speed Train Alternative)
- Project Alternative: Alternative 2 (previously known as the Consolidated Shared Track Alternative)

3.1 Development of Alternatives

The corridor alignment and station options selected by the Authority and FRA with the *California High-Speed Train Program EIR/EIS* were the basis for the identification of preliminary alignment alternatives and design options for this section of the High-Speed Rail System. Current operational conditions and projected expansions of other systems in the corridor are documented in Section 3.3

The project corridor is located between Los Angeles and Anaheim, as explained below and shown on Figure 3.1-1. Design of both alternatives is based upon the collaborative approach, which applies community, project objectives, and environmental resources as project criteria as detailed in Section 1.6. The profile information depicted in Figure 3.1-1 may be refined based on results of the collaborative approach as the design process continues. From Los Angeles to Vernon key considerations for the development of alternatives include effects on adjacent rail yards, the Los Angeles River, and the ability to accommodate passenger trains heading into and out of the congested approach to LAUS and the planned run-through tracks. From Vernon to Fullerton the segment would run along the BNSF Railway's San Bernardino Subdivision. Key considerations along this area of the project include minimizing impacts to adjacent residential, commercial and industrial properties. From Fullerton to Anaheim key considerations for this area include accommodating connections into ARTIC and minimizing impacts to adjacent residential, commercial and industrial properties.

3.1.1 Station Alternatives

3.1.1.1 Statewide Program EIR/EIS Alternatives

The *California High-Speed Train Program EIR/EIS* process was completed in November 2005. The Authority and FRA selected the technology for the High-Speed Rail System and corridors, alignments, and station location options through the program environmental analysis. For a more detailed examination of these issues, refer to the *California High-Speed Train Final Program EIR/EIS*.

The *California High-Speed Train Program EIR/EIS* examined three program alternatives for the statewide transportation network. They were:

- **No Project Alternative** – The State's transportation network as it is today, along with funded projects included in regional transportation plans.
- **Modal Alternative** – Enhancements to the State's transportation network using existing modes and technologies (mainly expanded airports and highways).

- **High-Speed Train Alternative** – A new high-speed rail system to connect California's major urban centers.

The High-Speed Rail Alternative was selected as the system alternative based on analysis in the *California High-Speed Train Program EIR/EIS*. The No Project Alternative was not able to provide the needed level of intercity mobility in the future, while the Modal Alternative provided reduced mobility compared to the High-Speed Rail Alternative. In addition, the Modal Alternative would have a higher cost than the High-Speed Rail Alternative, and more significant environmental impacts.

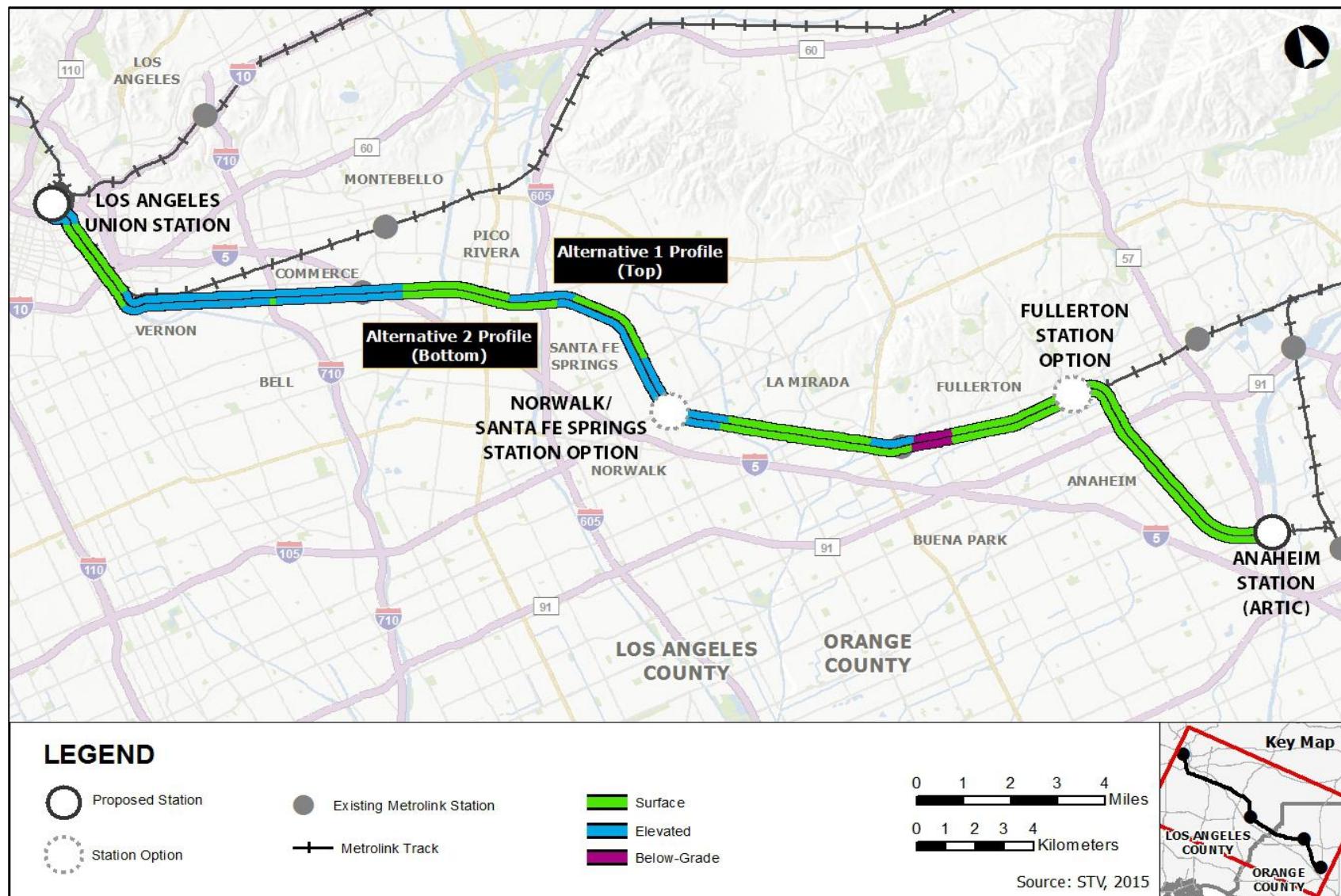


Figure 3.1-1 Los Angeles to Anaheim Overview

3.1.1.2 Los Angeles to Anaheim Routing and Station Alternatives

For the section of the High-Speed Rail project from Los Angeles to Anaheim, the *California High-Speed Train Program EIR/EIS* examined two corridor alignments. These alignments are shown in Figure 3.1-2, and described below:

- **LOSSAN Corridor** – This alignment follows the existing LOSSAN corridor from Los Angeles to Irvine, with intermediate stations in Norwalk / Santa Fe Springs and Anaheim. The existing rail corridor would be upgraded with electrification, additional tracks, and grade separations at all existing at-grade crossings. This alternative was assumed to share tracks with other passenger trains, and would be primarily at-grade between Los Angeles and Anaheim.
- **Union Pacific Santa Ana Branch Line** – This alignment would have used the existing Union Pacific Railroad (UPRR) Santa Ana Branch Line corridor and San Pedro Subdivision corridors from Los Angeles to Anaheim, then the LOSSAN corridor from Anaheim to Irvine. An intermediate station would have been located at Norwalk. The high-speed rail tracks would have been completely separated from all other rail traffic in the corridor, primarily on aerial structures or in trenches. This alignment was considered in the *California High-Speed Train Program EIR/EIS*, but was not selected for further analysis as it had greater environmental impacts than the LOSSAN Corridor alternative.



Source: California High Speed Train Program EIR/EIS, 2005

Figure 3.1-2 Anaheim to Los Angeles Alignments Evaluated in California High-Speed Train Program EIR/EIS

3.1.2 LOSSAN Corridor Land Uses and Constraints

The land uses adjacent to the LOSSAN corridor (including all alignment options described in the following sections) are shown in Figure 3.1-3. These land uses were compiled using the Southern California Association of Governments (SCAG) land use database, aerial photographs, and site visits. The land immediately abutting the LOSSAN corridor is mostly industrial, making up 48 percent of all adjacent land uses. Transportation and utility uses (including parallel roads, rail yards) directly abut approximately 30 percent of the corridor, with industrial uses directly behind the transportation uses in many areas to provide additional buffers between the railroad and residential areas. Residential uses directly abut approximately 8 percent of the ROW, while 4 percent of adjacent property is commercial. Parks and institutional uses abut approximately 2 percent of the corridor each. These estimates are in the form of linear feet and are derived from SCAG's 2008 land use data.

Many different railroad agreements exist between the property owners and the operating railroads that define current operating rights and usages allowed along the LOSSAN corridor. Involved parties include, but are not limited to: BNSF, UPRR, SCRRRA, LATC, OCTA, RCTC, SANBAG, VCTC, and Metro. Such agreements, where applicable, will be considered during the environmental review process. The Authority will continue to work with local partners to update or revise existing railroad agreements, as appropriate, in order to accommodate high-speed rail service along the LOSSAN corridor.

Areas of constraint include:

- **Residential Areas:**
 - Montebello
 - Pico Rivera
 - West Whittier (Unincorporated Los Angeles County)
 - La Mirada
 - Buena Park
 - Fullerton
 - Anaheim
- **Parks / Open Space:**
 - Los Angeles River (Los Angeles) – Planned
 - Zimmerman Park (Norwalk)
 - Hunt Library and Dog Park (Fullerton)
 - Independence Park (Fullerton)
 - Amerige Park (Fullerton)
 - Citrus Park (Anaheim)
- **Transportation**
 - Los Angeles Union Station
 - Metro Red Line Yards / BNSF Storage Yard (Los Angeles)
 - Hobart Rail Yard (Vernon)
 - 26th Street (Vernon)
 - Commerce Rail Yard (Auto Yard)
 - Commerce Locomotive Facility
 - Commerce Metrolink Station
 - Sycamore Street (Montebello)
 - Pico Rivera Freight Rail Yard
 - Rivera Road (Pico Rivera / West Whittier)
 - Norwalk / Santa Fe Springs Metrolink Station
 - Stage Road (La Mirada)
 - La Mirada / Santa Fe Springs Freight Rail Yards
 - Buena Park Metrolink Station
 - Lakeside Drive (Buena Park)
 - Artesia Avenue / Fullerton Municipal Airport (Fullerton)
 - Walnut Avenue (Fullerton)
 - Fullerton Transportation Center
 - Anaheim Amtrak / Metrolink Station

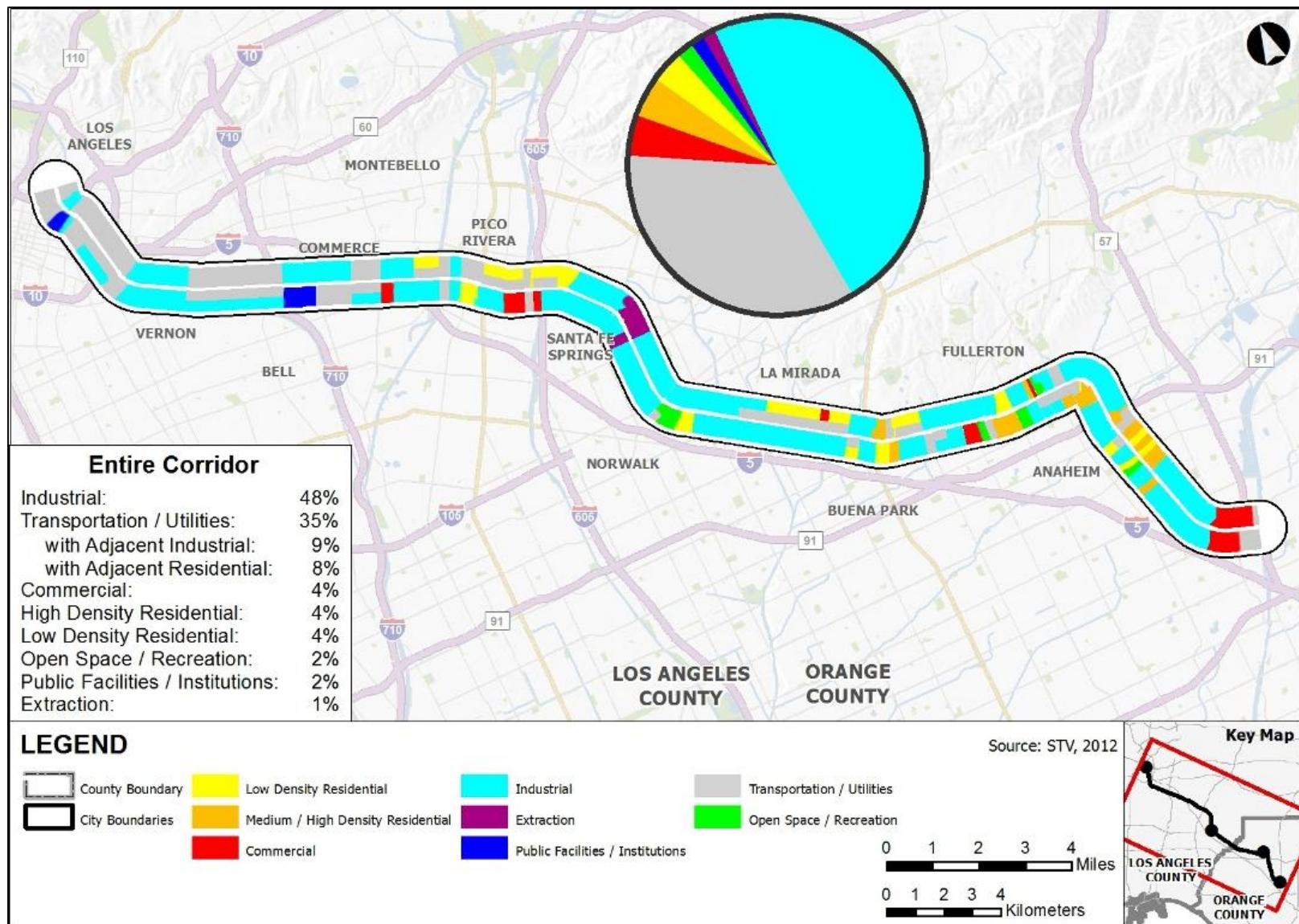


Figure 3.1-3 Land Uses along Los Angeles to Anaheim High-Speed Rail Section

3.1.3 Existing and Planned Transit Connections around the LOSSAN Corridor

The Los Angeles to Anaheim Project Section contains many existing and planned transit connections to proposed high-speed rail service in the LOSSAN corridor. Figure 3.1-4 shows some of these key connections.



Figure 3.1-4 Existing and Planned Corridor Transit Connections

3.1.4 Operational Objectives

Alternative 1 and Alternative 2 are the two alternatives that would best provide the capacity and performance of operations to introduce high-speed rail service between Los Angeles and Anaheim. Alternative 1's two tracks that are exclusively for high-speed trains allow for higher-speed high-speed rail operations than the shared-track alternatives, and remove potential impacts from delayed Metrolink and Amtrak service. In addition, it provides for a safer environment (no mixing of conventional trains including locomotives with lightweight electric multiple unit high-speed trains) that does not present as many safety issues that would require a waiver from FRA. Alternative 2 mitigates the operating impacts of the shared-track operation (such as congestion delay) by consolidating all passenger rail schedules in the corridor, and provides safe separation between freight trains and high-speed trains with mainly aerial configuration between Los Angeles and Norwalk/Santa Fe Springs.

The July 2008 "Concept Level Operational Feasibility Study," which analyzed the operational and projected train number growth remains valid for this 2016 SAA.

3.2 Current and Projected Conditions of LOSSAN Corridor

Approximately 22 miles of the 30.5 mile corridor has ROW owned by BNSF. BNSF currently operates 82 trains daily along the corridor with growth to 118 trains projected for 2030. Passenger intercity (Amtrak) and commuter (Metrolink) are projected to grow from 57 trains (2014) to 100 trains per day by 2030.⁵ BNSF is currently adding capacity to the corridor by constructing a third mainline track that parallels the existing two mainline tracks to Fullerton Junction and is nearly complete.

There are currently 16 at grade crossings along the LOSSAN corridor between LAUS and ARTIC. Figure 3.2-1 shows these crossings and the planned modifications to crossings by High-speed rail tracks and other agencies. Section 3.3.9 describes potential grade separations by others in the area between Santa Fe Springs and La Mirada as part of the BNSF Third Mainline Track and Grade Separation project. These improvements by others independent of high-speed rail are reflected on Figure 3.2-1. Four early-action grade separations are being planned with funding support from the Authority.

Four other crossings are still under consideration with their respective cities regarding modification to accommodate high-speed rail service. One of these crossings, Serapis Avenue in the City of Pico Rivera, is currently closed with the city considering modifications and reopening. Crossing closure is being considered for Sycamore Street and South Street in the City of Anaheim. Vermont Avenue, also in the City of Anaheim, is currently under study by the city. The Authority is working with the cities along the LOSSAN corridor as they consider different potential crossing modifications so future crossing configurations can be determined.

⁵ LOSSAN Corridor-wide Strategic Implementation Plan, April 2012. LOSSAN Rail Corridor Agency.

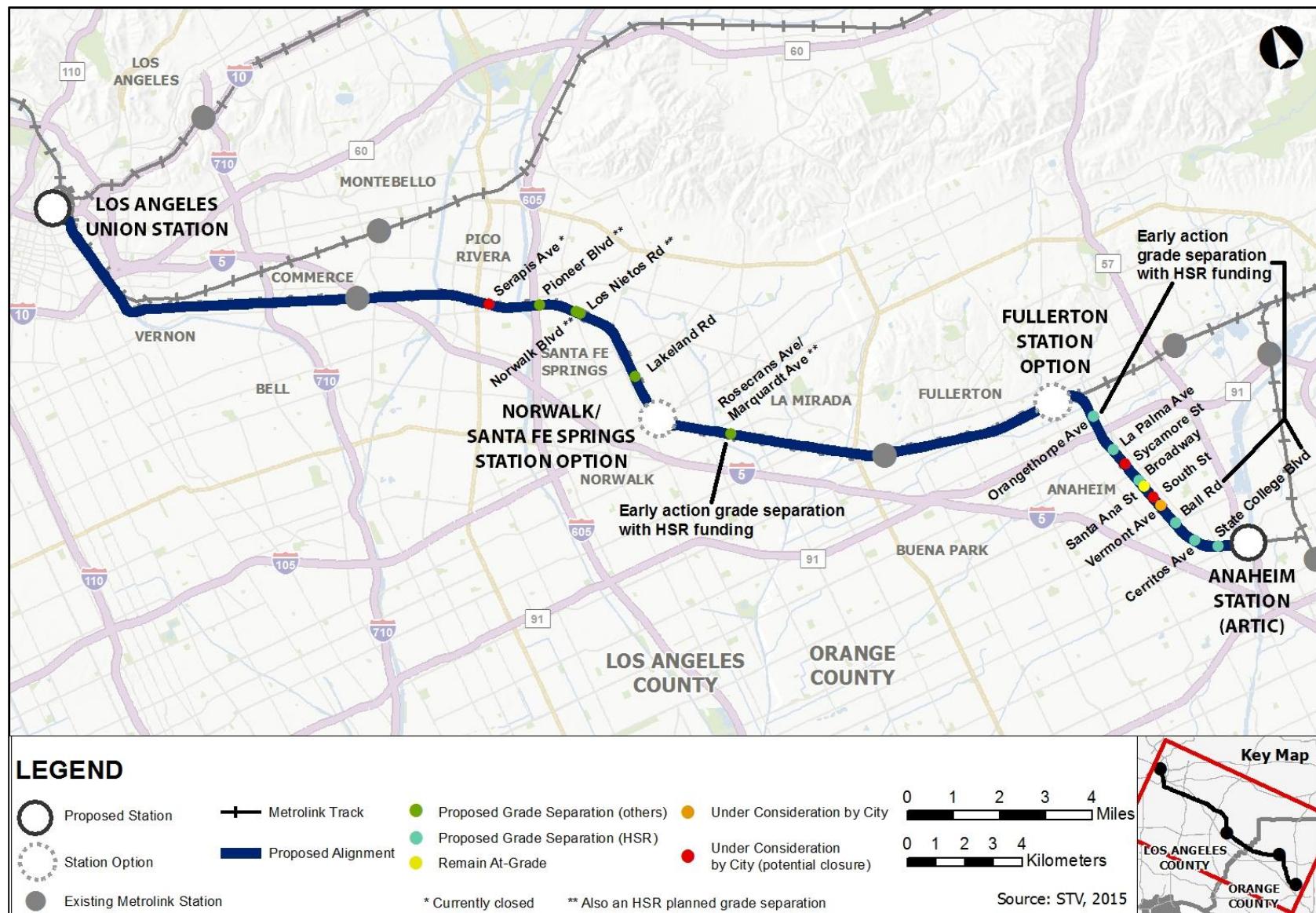


Figure 3.2-1 At-Grade Crossings in the Los Angeles to Anaheim Project Section

3.3 No Project Alternative

The No Project Alternative represents corridor conditions today and in the future (2030) if the Project is not built. The alternative includes financially constrained projects for the area. Financially constrained projects are projects for which funding has already been committed. Major transit and transportation projects of regional significance included in the No Project Alternative are listed below, shown in Figure 3.3-1 and described in the following subsections.

Future Projects included in No Project Alternative:

- Metro Union Division Bus Maintenance and Operations Facility
- Los Angeles Union Station Master Plan
- Patsaouras Plaza Expansion
- Southern California Regional Interconnector Project (SCRIP)
- Los Angeles Department of Transportation (LADOT) Fueling and Bus Maintenance Facility
- Regional Connector
- Seismic Retrofit of Sixth Street Viaduct
- I-710 Corridor Project
- BNSF Third Main Track and Grade Separation Project
- Orange County Transportation Agency (OCTA) Metrolink Service Expansion Program
- Anaheim Regional Transportation Intermodal Center (ARTIC)
- Anaheim Rapid Connection (ARC)
- Plans and Projects in the Vicinity of Proposed Stations and Station Options
- Other Projects Considered But Not Included in the No Project Alternative⁶
 - Metrolink Orange County Line 30 Minute Service – Los Angeles to Fullerton
 - Metrolink Strategic Plan
 - Metro West Santa Ana Transit Corridor
 - Metro Slotted Schedule Study
 - LOSSAN Strategic Plan

⁶ These projects are considered but not included because at this point they are preliminary studies that may or may not result in the development of physical projects.

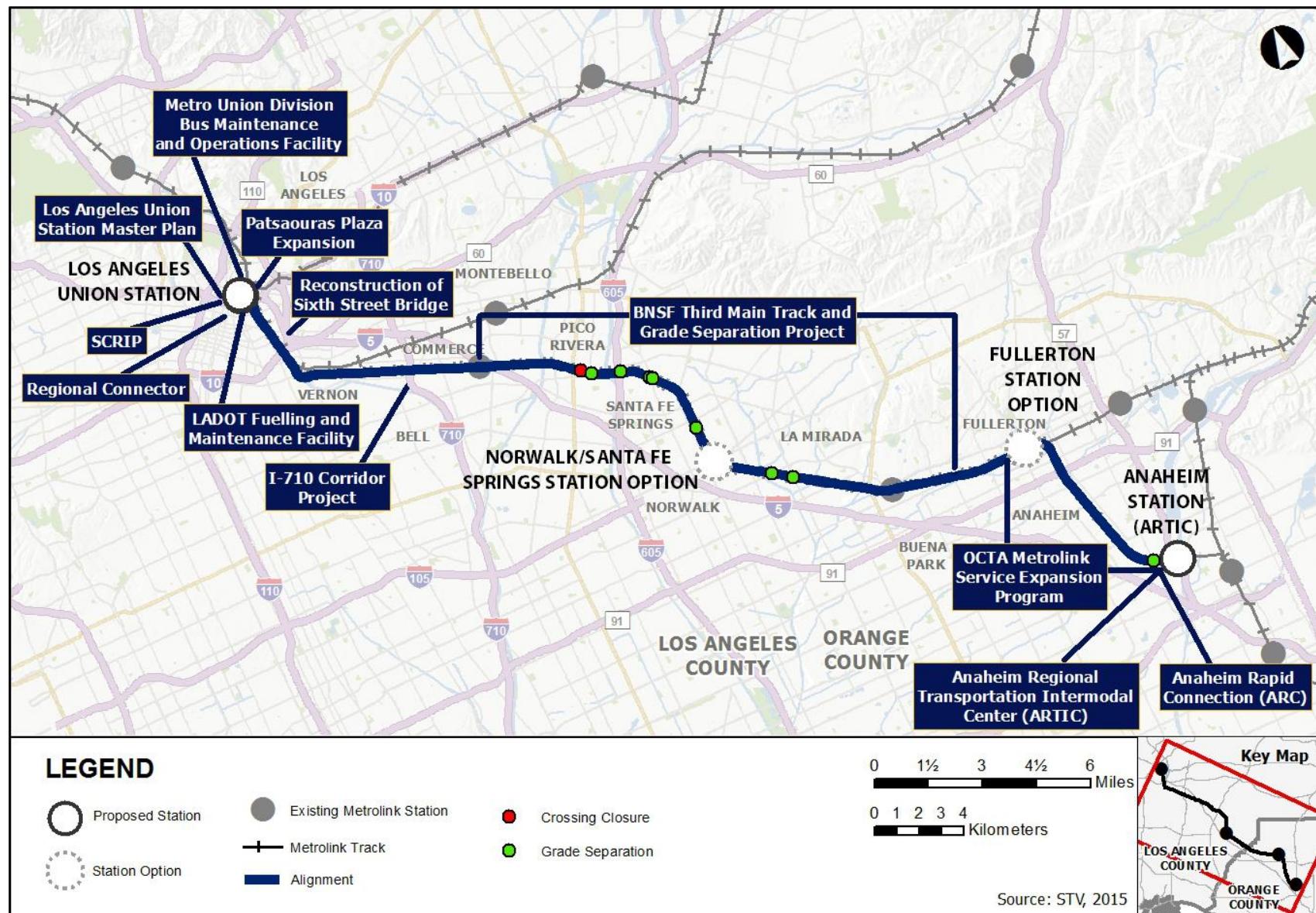


Figure 3.3-1 No Project Alternative - Overview

3.3.1 Metro Union Division Bus Maintenance and Operations Facility

The proposed 7.5-acre Metro Union Division Bus Maintenance and Operations Facility will be located on the northeast and southeast corners of the intersection of Vignes Street and Cesar E. Chavez Avenue, less than a quarter mile northeast of LAUS. The buses to be maintained and stored at the proposed Metro Union Division Bus Maintenance and Operations Facility would likely be transferred from the existing Division 2 bus maintenance facility that is located near the I-10 and south of downtown Los Angeles. The project consists of a three-story parking structure and a two-story bus maintenance/office building, planned to accommodate a maximum of 200 Compressed Natural Gas (CNG) standard buses. A CNG public vehicle access facility is planned to be located adjacent to the parking structure along Cesar E. Chavez Avenue. The facility is currently under construction and is anticipated to be completed in 2015.

3.3.2 Los Angeles Union Station (LAUS) Master Plan

Purchased in 2011 by the Los Angeles County Metropolitan Transportation Authority (Metro) for \$75 million, LAUS is a regional transit hub serving as a point of connectivity for regional transit serving the five counties in Southern California, including Amtrak, Metro Rail (Red, Purple and Gold Lines) and Metrolink. Metro is currently preparing a Master Plan for multi-modal facilities and transit oriented development (TOD) master plan. Previous entitlements allow for up to 6 million square feet of additional development at LAUS. At the October 24, 2013 Union Station Master Plan Board Meeting, Metro staff presented a concept that would create a large multi-modal concourse terminal that will improve transportation connectivity and allow for the integration of high-speed rail in the future. The Metro Board of Directors approved the recommended concourse terminal design concept. Metro has stated their preference for how high-speed rail should connect to LAUS is through a station on an adjacent property. Please see Figure 3.3-2 below for a graphic representation of Metro's high-speed rail preference. The Metro Board formally adopted the LAUS Master Plan in fall 2014.⁷ Consultation between the Authority and Metro is ongoing as further design and analysis of the High-Speed Rail project and Union Station progresses.⁸

⁷ Metro, The Source, <http://thesource.metro.net/2014/10/23/metro-board-approves-union-station-master-plan-allowing-near-term-projects-to-go-forward/>, information retrieved December 2014.

⁸ Metro, Los Angeles Union Station Master Plan description available at <http://www.metro.net/projects/LA-union-station/>, information retrieved July 2014.



Source: Metro, 2014

Figure 3.3-2 Draft Concept from Metro Master Plan, June 2014

3.3.3 Patsaouras Plaza Expansion

Patsaouras Plaza is located on the east side of LAUS, and serves as a bus transfer and layover facility for local and regional bus service operators. The expansion of Patsaouras Plaza to the south is a key component of the Metro's Express lanes pilot project, which aims to reduce traffic congestion on Los Angeles' busiest freeways. The expansion plans add a new transit station along the El Monte Busway, which will allow direct transfers from the Busway to other bus and rail operators at LAUS. Construction has begun, with a planned completion in late 2016.

3.3.4 Southern California Regional Interconnector Project (SCRIP)

The legislation that authorizes the California High Speed Rail program will also fund projects outlined in a Memorandum of Understanding (MOU) between the Authority and several Southern California agencies, including Metro. The top priority under this MOU is the construction of interconnection tracks at Union Station to increase the overall capacity of the station and prepare for the expected growth of commuter and regional rail, in addition to providing additional capacity for future needs.

Metro and Caltrans are conducting preliminary planning, environmental, and engineering studies for the Southern California Regional Interconnector Project (SCRIP) that will create a new LOSSAN connection into LAUS. SCRIP will provide several benefits for LOSSAN corridor trains. One benefit is that the current "stub-end" configuration will be replaced, and trains would be able to continue through the station without turning around. This will allow through-movements such as San Diego to San Luis Obispo for Amtrak Pacific Surfliner service or Orange County to Lancaster for Metrolink service. The tracks would also allow for a quicker trip into the station for trains coming from the south (which currently have to loop to the north to enter or exit the station), and relieve capacity constraints at the north end of Union Station. An overview map for this Project is shown in Figure 3.3-3.



Source: Amtrak, Caltrans, HDR, STV, 2005

Figure 3.3-3 Southern California Regional Interconnector Project – Planned Configuration

Current timeline for the completion of design activities is October 2016 and construction complete by February 2019. Metro and the Authority are coordinating closely to ensure that SCRIP and High-Speed Rail projects do not conflict with each other.

3.3.5 LADOT CNG Fueling and Bus Maintenance Facility

The proposed project is located south of LAUS and U.S. Highway 101, and is located under the proposed alignment for High-Speed Rail. The 2.75 acre facility will contain the LADOT bus maintenance, CNG fueling and inspection facility, storage/lay over areas, and transit administration building. The project is funded by the Federal Transit Administration. The estimated completion date for this project is not currently available.

3.3.6 Regional Connector Transit Project

The Metro Regional Connector Project will extend from the Metro Gold Line Little Tokyo/Arts District Station to the 7th Street/Metro Center Station in downtown Los Angeles, and will allow passengers to transfer from the Gold Line to Blue, Expo, Red and Purple Lines, bypassing Union Station (see Figure 3.3-4). This extension will also provide a one-seat ride for travel across Los Angeles County. From the Metro Gold Line, passengers will be able to travel from Azusa to Long Beach without transferring lines and from East Los Angeles to Santa Monica without transferring lines. This project will receive funding related to California High Speed Rail as part of the High Speed Rail Connectivity Program.⁹ The project is under construction and is planned to be in operation by 2020.¹⁰

⁹ High Speed Rail Connectivity Program description available at <http://www.catc.ca.gov/programs/hsptbp.htm>

¹⁰ Metro. Regional Connector Transit Project description available at <http://www.metro.net/projects/connector/>, information retrieved January 2014.

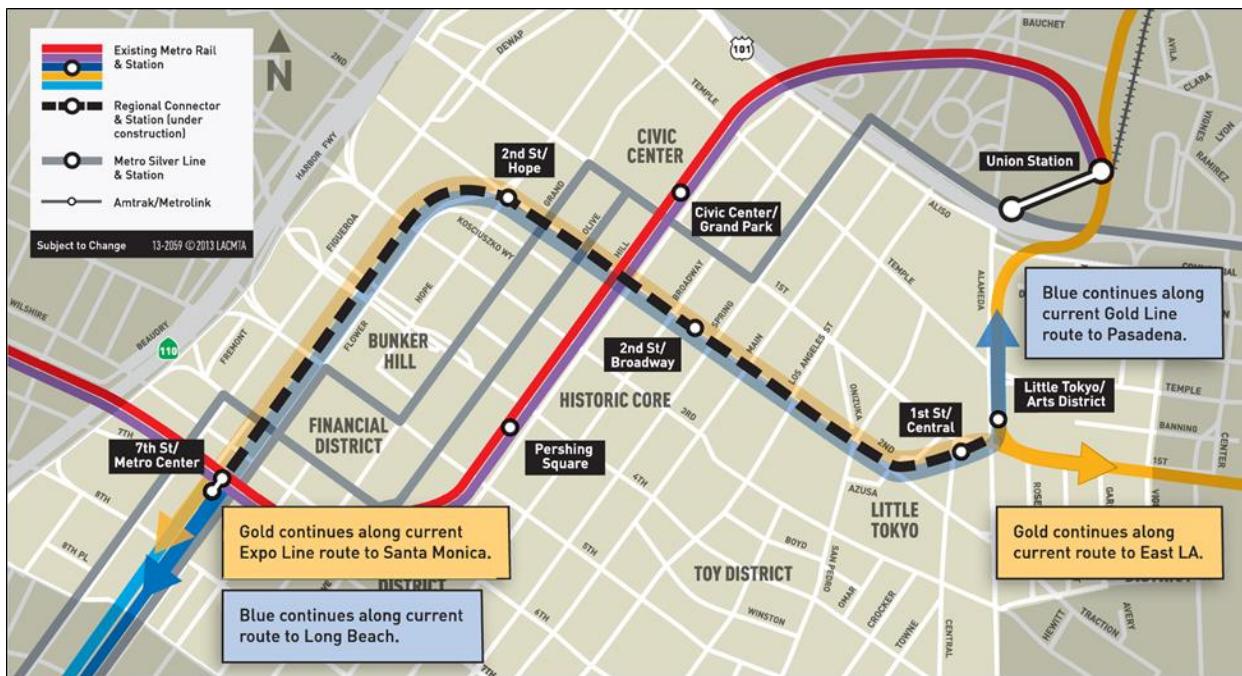


Figure 3.3-4 Regional Connector Transit Project

3.3.7 Seismic Retrofit of Sixth Street Viaduct

The Seismic Retrofit of Sixth Street Viaduct is included in the SCAG 2012 RTP and entails providing seismic safety for the Sixth Street Viaduct over the LOSSAN corridor and Los Angeles River to meet current seismic standards. The viaduct is a reinforced concrete structure with steel arches that serves as one of the main east-west arteries carrying two lanes of traffic in each direction over the Los Angeles River, Santa Ana Freeway, several railroad tracks, and surface streets. Phase I of the bridge's retrofit was completed in 1995. Phase II, which will include replacement of the 80-year old bridge over the Los Angeles River, is anticipated to start in 2015 with project completion by end of 2018. A rendering of the replacement concept is shown in Figure 3.3-5, with the span over the LOSSAN corridor shown in the left of the figure.¹¹

¹¹ City of Los Angeles, Bureau of Engineering. Retrieved from <http://www.sixthstreetviaduct.org/>, accessed April 2016.



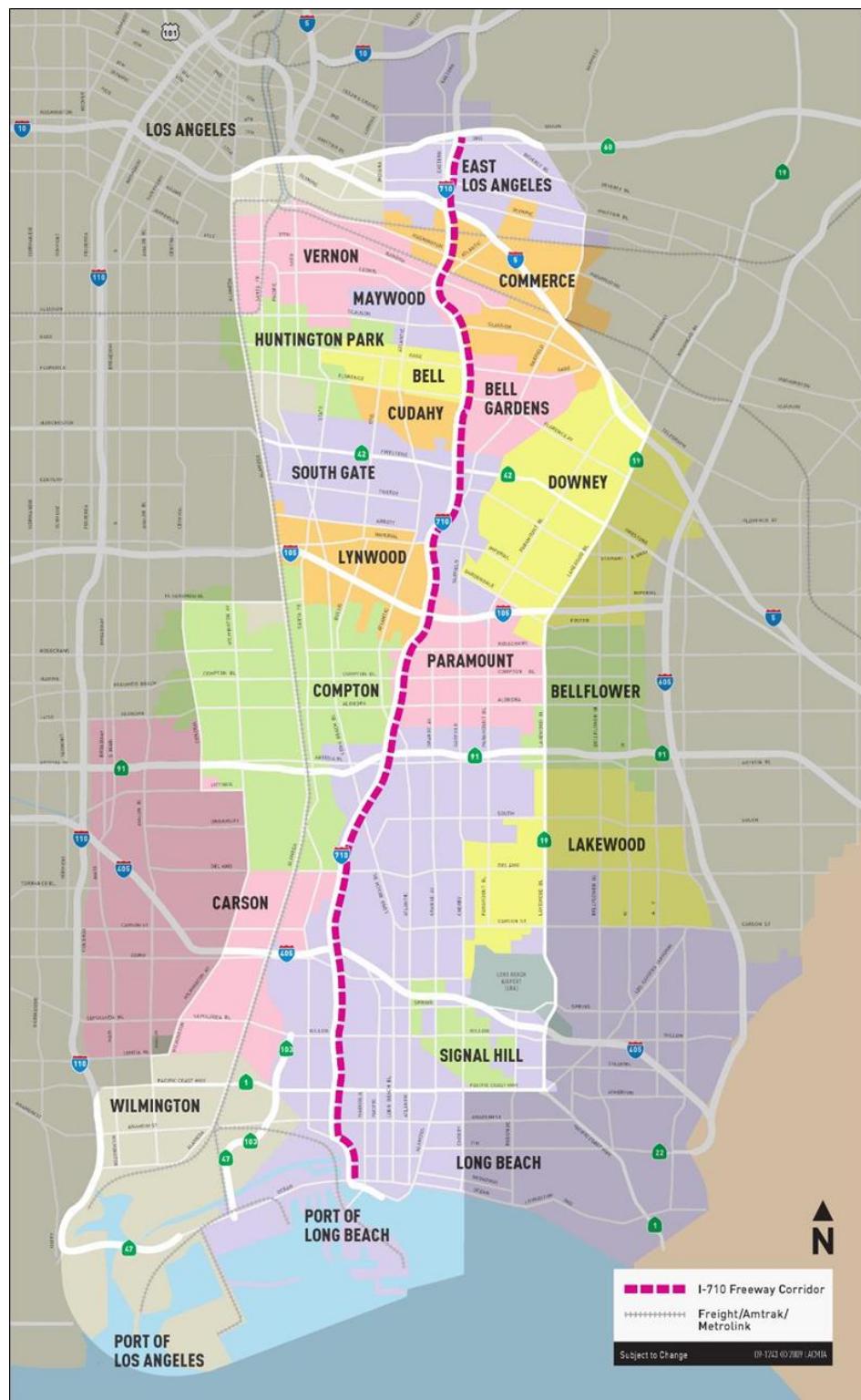
Source: HNTB, 2012

Figure 3.3-5 Proposed Sixth Street Bridge Replacement Concept

3.3.8 I-710 Corridor Project

The Long Beach Freeway (I-710) links the ports of Long Beach and Los Angeles to major Southern California distribution centers and intermodal rail facilities. This corridor is being studied (Draft EIR/EIS was released in August 2012) to determine how its congestion and safety issues might be resolved. This project is included in the SCAG 2012 RTP. Measure R identified \$590 million for the I-710 South and/or Early Action Projects, and, in addition, funding through the next authorization of the Surface Transportation Bill is being sought and public-private partnership (e.g., tolling) is being considered. Alternatives being considered include widening the I-710 to ten general purpose lanes, with some alternatives also including an additional four lanes for freight (which may also require zero-emission trucks). The LOSSAN corridor runs perpendicular to the I-710 corridor (in the segment between Vernon and Fullerton), which runs through 15 cities and unincorporated areas in Los Angeles County. It is expected that the Recirculated Draft EIR/Supplemental Draft EIS will be released in early 2016. The Study Area and route of the I-710 Corridor Project is shown in Figure 3.3-6.¹²

¹² I-710 Corridor Project. <http://www.metro.net/projects/i-710-corridor-project/>, accessed January 2014.



3.3.9 BNSF Third Mainline Track and Grade Separation Project

The BNSF Railway is currently constructing and installing this improvement to the segment of the LOSSAN corridor between Commerce and Fullerton with support from the California Department of Transportation (Caltrans) and FRA. This segment of the corridor carries BNSF interstate freight traffic heading to and from the ports of Los Angeles and Long Beach, BNSF's Hobart yard, and interchange traffic to the Los Angeles Junction Railway, as well as Amtrak and Metrolink passenger service. Consultation between the Authority, Caltrans and the impacted cities are ongoing to ensure the projects do not preclude high-speed rail in the future.

The BNSF Third Mainline Track Project has been completed for the length of the LOSSAN corridor between Commerce and Fullerton, with the exception of the crossing at Rosecrans Avenue /Marquardt Avenue. These improvements, which are included in SCAG 2012 RTP and further detailed in the *Third Main Track and Grade Separation Project Draft and Final Environmental Impact Reports* (Caltrans, 2003), are intended to increase capacity, decrease congestion and delay, and enhance safety through the corridor. The specific improvements are listed below.

- **Third Main Track** between Control Point (CP) Vail in Commerce and CP Basta in Fullerton is completed except for the crossing at Rosecrans Avenue /Marquardt Avenue, which remains two mainline tracks. The Rosecrans Avenue / Marquardt Avenue grade separation must be completed in order to complete the BNSF Third Main Track Project.
- **Grade Separations** (roadway underpasses) at the following current at-grade crossings:
 - Pioneer Boulevard (future grade separation by others)
 - Norwalk Boulevard / Los Nietos Road (future grade separation by others)
 - Lakeland Road (future grade separation by others)
 - Rosecrans Avenue / Marquardt Avenue (future grade separation by others)
- Three grade crossing modifications have been completed as a part of this project
 - Passons Boulevard (grade separation)
 - Valley View Avenue (grade separation)
 - Serapis Avenue (closure)

3.3.10 Anaheim Regional Transportation Intermodal Center (ARTIC)

The ARTIC Project, developed as a collaborative effort between OCTA and the City of Anaheim, is a new multi-modal transportation center in the City of Anaheim. It is located where the LOSSAN corridor crosses under State Route 57 (the Orange Freeway), east of Angel Stadium of Anaheim. ARTIC is listed in the SCAG 2012 RTP and is being developed in two phases. Phase 1 provides a new facility to serve Metrolink and Amtrak and connections for local and interstate rubber-tire transit services. Phase 1 was completed in December 2014 and is now open and operational. It is funded by local Renewed Measure M - Project T Bond proceeds, and Measure M Transit Revenue. Phase 2 will provide additional passenger facilities and support services, with some interior additions and modifications to accommodate the High-Speed Rail Station and the Anaheim Rapid Connection Project. Conceptual plans for the station footprints and design are shown in Figure 3.3-7 and Figure 3.3-8.

1. Intermodal Center

2. Plaza

3. Surface Parking/Future Development

5. Amtrak/Metrolink/HSR Platforms

6. Honda Center



Source: A | CONNEXT, 2014

Figure 3.3-7 ARTIC Conceptual Site Plan

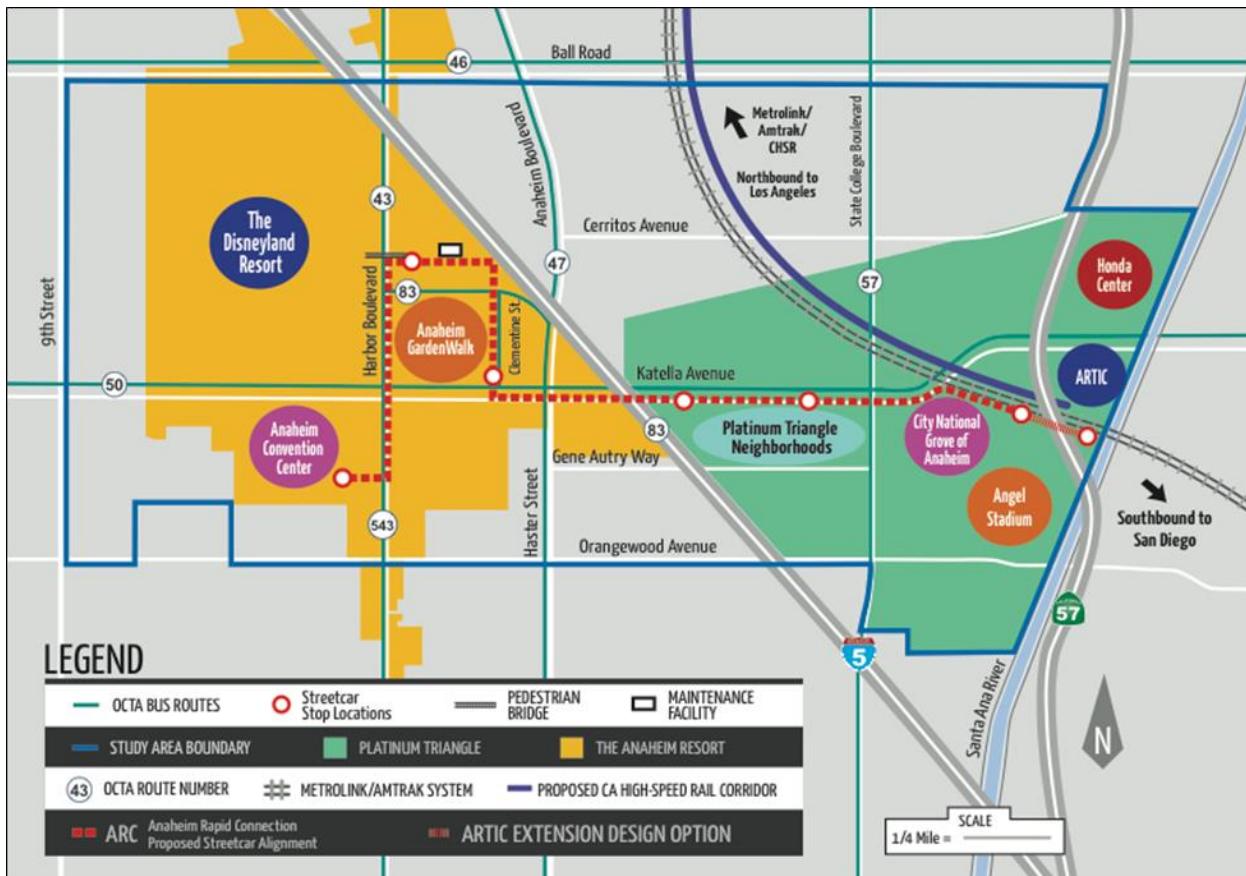


Source: A | CONNEXT, 2014

Figure 3.3-8 ARTIC – Conceptual Rendering

3.3.11 Anaheim Rapid Connection

Anaheim Rapid Connection (ARC) is a proposed streetcar in the environmental review process that would connect Anaheim area destinations with the regional rail at ARTIC. As shown in Figure 3.3-9, the alignment is planned to span 3.2 miles and will have stations in close proximity to the Anaheim Convention Center, Disneyland Resort, Anaheim Garden Walk, Platinum Triangle, Grove of Anaheim, Angel Stadium, Honda Center, and ARTIC. The study is currently funded through OCTA Measure M2 Go Local funds.¹³ This project is also included in SCAG's 2012-2035 Regional Transportation Plan that was adopted in April 2012 and is currently undergoing environmental review. An opening date is yet to be determined.¹³



Source: A | CONNEXT, 2014

Figure 3.3-9 ARC Alignment

3.3.12 Other Projects Listed in the Southern California MOU

The following projects (grade separations, street closures, street modifications, and/or crossings improvements) along the Los Angeles to Anaheim alignment are included in the MOU:

- State College Boulevard
- Ball Road
- Orangethorpe Avenue
- Sycamore Street
- Santa Ana Street
- Alondra Boulevard
- Carmenita Road
- Vermont Avenue
- South Street
- Broadway

¹³ A | CONNEXT. ARC description available at <http://aconnect.com/arc/>, information retrieved December 2014.

3.3.13 Plans and Projects in the Vicinity of Proposed Stations and Station Options

Table 3.3-1 describes plans and projects by local agencies and private entities in the vicinity of proposed high-speed rail stations and station options.

Table 3.3-1 Plans and Projects in the Vicinity of Proposed Stations and Station Options

Project/Plan	Description	Source
Los Angeles Union Station		
Los Angeles Mobility Plan 2035	Citywide mobility element update. Draft EIR released February 2014.	City of Los Angeles Department of City Planning (information retrieved in December 2014 from cityplanning.lacity.org/)
Norwalk/Santa Fe Springs Station Option		
The Village Housing at Heritage Springs	Master-planned residential community of 544 attached dwelling units on 54.5 acres bounded by Telegraph Road, Clark Avenue, Bloomfield Avenue, and Norwalk Boulevard. Project currently under construction.	City of Santa Fe Springs Planning and Development Department (information retrieved in December 2014 from www.santafesprings.org/cityhall/planning/planning/new_or_upcoming_residential_projects.asp)
Petro Builders Industrial Building	Construction of a 21,239 square foot concrete industrial warehouse building and 4,656 square foot maintenance building at 10145 Geary Avenue	City of Santa Fe Springs Planning and Development Department (information retrieved in December 2014 from www.santafesprings.org/cityhall/planning/planning/new_or_upcoming_industrial_projects.asp)
Golden Springs Development – Building I	Construction of a 200,000 square foot industrial building at west of Carmenita Road at Foster Road	City of Santa Fe Springs Planning and Development Department (information retrieved in December 2014 from www.santafesprings.org/cityhall/planning/planning/new_or_upcoming_industrial_projects.asp)
Baker Petrolite Office Building	Construction of 7,125 square foot industrial office and warehouse building on a 2.33 acre site at 11808 Bloomfield Avenue. This will replace for existing metal buildings that are to be demolished.	City of Santa Fe Springs Planning and Development Department (information retrieved in December 2014 from www.santafesprings.org/cityhall/planning/planning/new_or_upcoming_industrial_projects.asp)

Project/Plan	Description	Source
Fullerton Station Option		
131 E Brookdale	9 apartment units developed on vacant property at 131 East Brookdale Place. MND was released in July 2014 and the development is awaiting approval from the City's planning commission and City Council.	City of Fullerton Community Development Department (information retrieved in December 2014 from www.cityoffullerton.com/depts/dev_serv/development_activity/131_brookdale.asp)
Downtown Core and Corridors Specific Plan	Specific Plan spanning 1,310 acres of the City, including Downtown Fullerton and the existing Fullerton Transportation Center. The Draft Specific Plan was posted in July 2014.	City of Fullerton Community Development Department (information retrieved in December 2014 from www.cityoffullerton.com/depts/dev_serv/development_activity/dccsp.asp)
Harbor Walk Specific Plan	Specific Plan for mixed-use development at 770 South Harbor Boulevard. The plan was posted in July 2014.	City of Fullerton Community Development Department (information retrieved in December 2014 from www.cityoffullerton.com/depts/dev_serv/development_activity/harborwalk.asp)
Orngefair Multifamily Development	Two four-story apartment buildings totaling 323 units at 1445 South Lemon Street. The project was approved by the City's planning commission and City Council in September 2013.	City of Fullerton Community Development Department (information retrieved in December 2014 from www.cityoffullerton.com/depts/dev_serv/development_activity/orngefairhousing.asp)
SOCO Santa Fe Housing	Four story mixed-use development wrapped around a five-level parking structure at a 2.4 acre site at 250 West Santa Fe Avenue. The revised project was approved in August 2013.	City of Fullerton Community Development Department (information retrieved in December 2014 from www.cityoffullerton.com/depts/dev_serv/development_activity/soco_santa_fehousing.asp)

3.3.14 Other Projects Considered But Not Included in the No Project Alternative

There are several other proposed projects along the LOSSAN corridor that are not included as part of the No Project Alternative but are considered in operations plans and engineering designs as they may potentially impact the introduction of high-speed rail service in this corridor. They are described below.

3.3.14.1 Metrolink Orange County Line 30 Minute Service – Los Angeles to Fullerton

As described in Section 3.3, OCTA is currently increasing Metrolink Orange County Line service to 30 minute headways between Laguna Niguel and Fullerton. In the future, this service is envisioned to continue to LAUS as many of the current Metrolink Orange County Line trips are destined for Los Angeles. Although existing track capacity and funding constraints currently preclude expansion of the

service north of Fullerton, future implementation of the 30 minute service north of Fullerton is considered in the Project's operating simulations.

3.3.14.2 Metrolink Strategic Plan

Metrolink is in the process of updating their Strategic Plan. The plan will outline Metrolink's goals and direction for the next 10 years.

3.3.14.3 Metro West Santa Ana Transit Corridor

The West Santa Ana Transit Corridor project proposes LRT service from Artesia in south Los Angeles County to LAUS. The project is proposed partially in a railroad ROW that extends for approximately 20 miles from the City of Paramount in Los Angeles County to the City of Santa Ana in Orange County. Much of the corridor has been abandoned and is not used for mass transit purposes. The Measure R sales tax measure that was approved by the voters of Los Angeles County in November 2008 provided \$240 million match towards the corridor's total project cost.

In coordination with OCTA and SCAG, Metro prepared an AA study to examine the range of potential transit service opportunities that could be implemented along the corridor to reduce congestion on nearby streets and freeways, and provide adjacent communities with access to the regional transit network. Six Light Rail Transit alternatives along with "No-Build" and Transportation Systems Management alternatives are being advanced for further evaluation and a Technical Refinement Study of the AA was released in July 2015. This study recommends four alternatives for further analysis. The transit corridor under study is shown in Figure 3.3-10.¹⁴

3.3.14.4 Metro Slotted Schedule Study

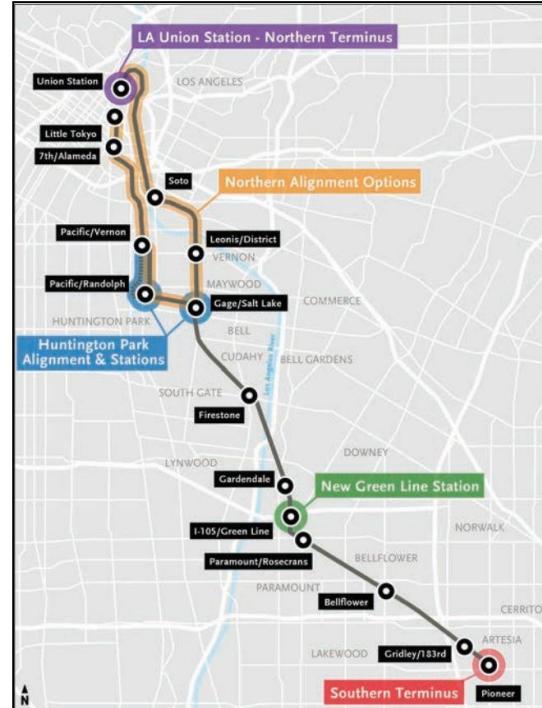
This study is designed to analyze the available railroad time slots, based on the current number of mainline tracks, to determine the rail infrastructure that will be needed to support the projected growth anticipated by the current operating railroads.

3.4 Project Alternatives

The Los Angeles to Anaheim corridor is within an urban environment, with other rail operators in the area, which include trains run by the National Railroad Passenger Corporation (Amtrak), the Southern California Regional Rail Authority (Metrolink), the Union Pacific Railroad, and the BNSF Railway. The Los Angeles to Anaheim Project Section of the High-Speed Rail System would extend approximately 30 miles, starting at LAUS and continuing south to ARTIC in Anaheim. See Appendix D for plan and profile maps for the full alignment of project alternatives.

As described above, the stations listed in the *California High-Speed Train Program EIR/EIS* that are still being considered as a part of this 2016 SAA include Los Angeles Union Station (LAUS), Norwalk / Santa Fe Springs, Fullerton and ARTIC in Anaheim. Construction of ARTIC was recently completed and the station is now open and operational.

¹⁴ Metro. West Santa Ana Transit Corridor description available at <http://www.metro.net/projects/west-santa-ana> information retrieved April 2016.



Source: Metro, 2015

Figure 3.3-10 West Santa Ana Transit Corridor

The two alignment alternatives being evaluated in this 2016 SAA meet short, medium, and long term goals and objectives defined for the introduction of high-speed rail service. Both alternatives are preliminarily designed to fit within the constrained corridor with a double-track High-Speed Rail System to accommodate planned project operational needs for uninterrupted rail movement. The guidelines set forth by the FRA in the November 2009 "High-Speed Passenger Rail Safety Strategy" and the March 2013 "Final Rule of 49 CFR Parts 213 and 238" will be followed to achieve this. Limited additional width would be required beyond the existing railroad ROW to allow for high-speed rail. The high-speed rail alignment parallels the existing railroad corridor between LAUS and ARTIC in Anaheim. Planned travel time for both alternatives is the same: approximately 22 minutes.

Both Project Alternatives 1 and 2 include all of the funded projects listed in the No Project Alternative.

Conceptual project footprints for each alternative have been developed to capture all of the necessary area to achieve service within the corridor. These conceptual project footprints have been developed in order to conduct alternatives analysis based on the physical difference between the two options evaluated in this 2016 SAA. The conceptual footprints for these alternatives are preliminary and subject to change, pending additional design development and coordination with stakeholders and public agencies. As engineering design advances for this corridor and input is provided by key stakeholders the description and evaluation of the options included in this 2016 SAA will continue to evolve. Decisions regarding project approval and construction activities are not being made at this time.

As seen in the cross section figures in Sections 3.4.1 and 3.4.2, conceptual design currently includes intrusion barriers. Continued coordination between relevant agencies and ROW owners may result in the removal of these barriers.

Both Alternatives 1 and 2 have the same systems support infrastructure. Each conceptual project footprint includes:

Track area

Conceptual station footprints

Traction Power Substation footprint

Maintenance of Way Facility footprint

Light Maintenance Facility footprint

Radio Tower footprints

ROW requirements for new & modified grade separations

Temporary construction easements

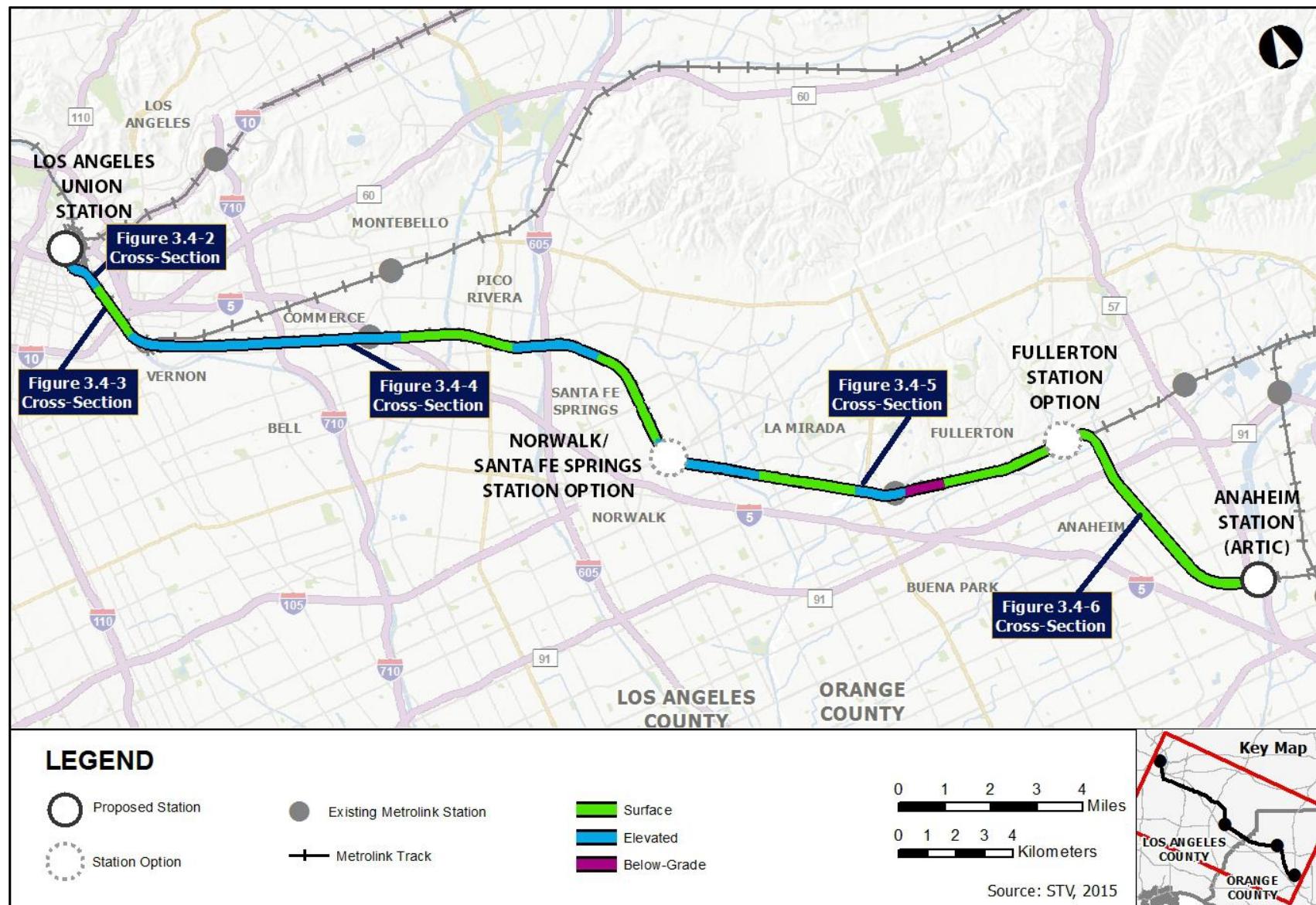
ROW requirements for affected third parties

The heavy maintenance facility previously identified in the 2010 SAA is no longer located within the Los Angeles to Anaheim segment. A light maintenance and maintenance-of-way facility will be required in this segment and are accounted for in the conceptual footprint. The facilities are defined in the July 2013 "Requirements for O&M Facilities."

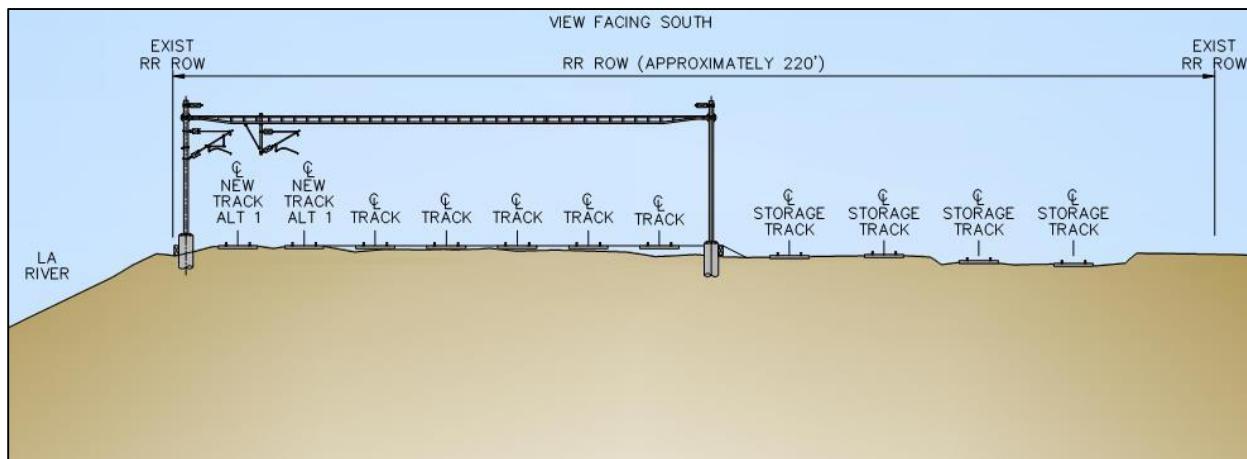
3.4.1 Project Alternative: Alternative 1

Alternative 1 was developed and approved in late 2009, prior to the FRA release of the first "High-Speed Rail Safety Strategy" in November 2009. Initial design development was completed in January 2010. Alternative 1 includes all the funded projects in the No-Project Alternative and considers all the projects described in Section 3.3. High-Speed Rail would construct up to 3 new tracks, for a total of up to 6 tracks, in this section for Alternative 1. This option has a larger conceptual project footprint than Alternative 2. The improvements for this alternative are described in this section. An overview of Alternative 1 is shown in Figure 3.4-1.

Given the current widths of the railroad ROW, this configuration would require additional ROW, and/or aerial structures. In general, at its widest, Alternative 1 would require an additional 65 feet of ROW, at its narrowest Alternative 1 would require no additional ROW, and for the majority of the corridor Alternative 1 would require an additional 60 feet of ROW. Additionally, ancillary facilities (traction power sub stations, radio towers, etc.) required for both Alternative 1 and 2 would also be installed adjacent to the right-of-way and would require additional ROW.

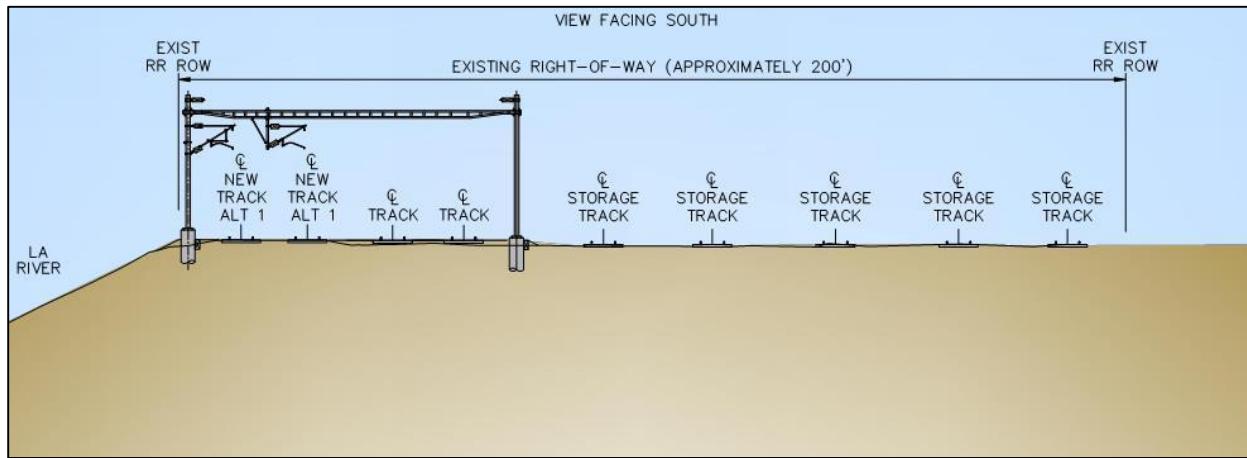


LAUS currently serves as the transportation hub for the Los Angeles region, serving Amtrak intercity trains, Metrolink commuter trains, Metro Red and Purple Line subway trains, Metro Gold Line light rail trains, Silver Line Bus Rapid Transit, and a variety of local, regional and interstate bus services. The northern end of LAUS platform is the northern limit of the study boundaries for this 2016 SAA. Under both LAUS station configurations for each of the two alternatives, the high-speed rail track alignment between LAUS and 1st Street would parallel SCRIP as planned by Metro. The alignment would run from LAUS to the LOSSAN corridor on an aerial structure between Commercial Street and Ducommun Street and would come down to grade just before the 1st Street Bridge.



Source: STV, 2015 (Figure not to scale)

Figure 3.4-2 Alternative 1 – Typical Cross-Section – LA River West Bank: At-Grade South of LAUS



Source: STV, 2015 (Figure not to scale)

Figure 3.4-3 Alternative 1 – Typical Cross-Section – LA River West Bank: Approaching Redondo Junction

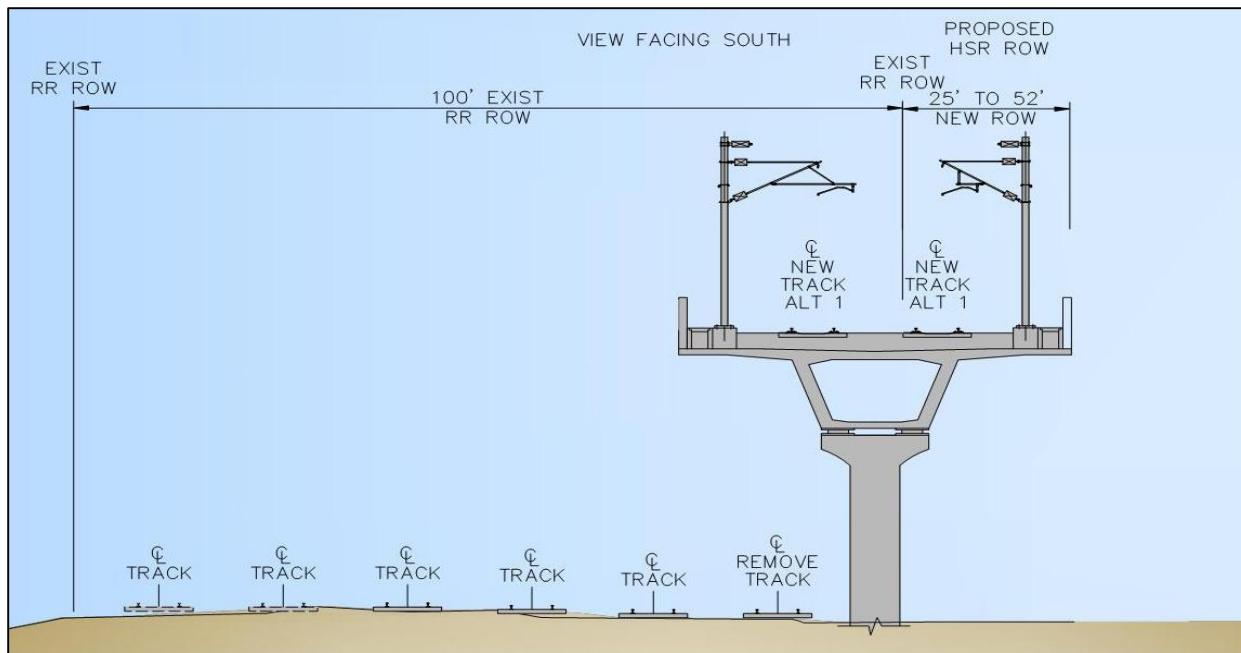
Through the City of Los Angeles, Alternative 1 would leave LAUS by crossing diagonally across the future LADOT CNG Fueling and Bus Maintenance Facility, Little Tokyo and passing over First Street on an aerial structure. The structure would be 17.5 feet above the road surface and would continue north of the Fourth Street bridge where the alignment is at-grade. The structure then continues south, adjacent to the Los Angeles River, to just south of Olympic Boulevard. The alignment between Fourth Street and Olympic Boulevard would be immediately adjacent to the Los Angeles River and east of the existing Metrolink/Amtrak tracks and Metro Red Line Maintenance Yard. Figure 3.4-2 and Figure 3.4-3 show the alignment position for Alternative 1 in this area. South of Olympic Boulevard, the alignment would begin to cross the LA River (upstream of the existing bridge) on an aerial structure and continue on an aerial structure for approximately 6 miles.

The design of Alternative 1 would connect to the Los Angeles to San Diego High-Speed Rail Project Section, a High-Speed Rail Phase II project, along the west bank of the Los Angeles River. The connections between these segments are described fully in the March 3, 2011 *Los Angeles to San Diego via the Inland Empire Section Preliminary Alternative Analysis Report*.

For Alternative 1, from Vernon south towards Fullerton, space for six tracks would typically be provided. Two new tracks would be added south of the existing tracks (space is provided for a future fourth track on the north side of the corridor). This allows the reuse of the three existing tracks and many of the existing grade separation structures. However, such a configuration would require approximately 25 to 35 feet of additional ROW on the south side of the corridor. An aerial cross-section as shown in Figure 3.4-4 would generally be utilized through Vernon, Bell, Commerce and Santa Fe Springs. Two new electrified aerial tracks would be constructed alongside the three existing tracks (space is provided for a future fourth track on the north side of the corridor) through this portion of the alignment. An additional 25 to 60 feet of ROW would be required along the existing 100 feet of railroad ROW in this area.

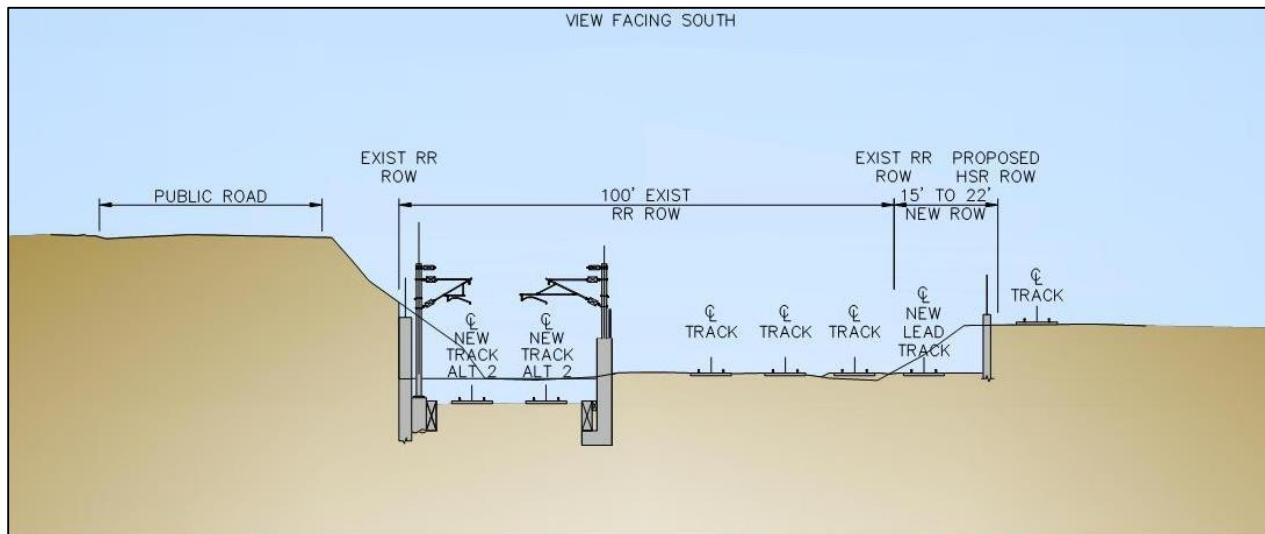
At-grade configurations are utilized through Montebello and just east of the I-605 in Santa Fe Springs, and from La Mirada to Fullerton, except for a short cut-and-cover tunnel near the Fullerton Airport. From La Mirada south towards Fullerton, the typical cross-section would be at-grade. Figure 3.4-5 is an example of such a cross-section, with two new electrified tracks in addition to the existing tracks. About 19-29 feet of ROW width would be needed in addition to the 100 feet of existing railroad ROW width.

Along the ROW in Vernon and Commerce, BNSF has yard leads, storage lead and spur tracks along the north and south sides of the ROW. These additional tracks within their existing ROW could push the ROW needs to 50 feet or more when these conditions are encountered. A typical aerial cross-section can be seen in Figure 3.4-4. A trench is not a viable option through this area because of the major ROW impacts and construction staging which would impact BNSF's daily operations. A tunnel is similarly not a viable option because the cost is approximately three times more than a viaduct through this section. Where the alignment is not at-grade, an aerial structure would be used to minimize impacts on existing railroad activities as well as impacts on adjacent right of way. An aerial structure requires approximately 19 to 29 feet of additional ROW. If a trench is used, the ROW impacts would increase approximately threefold. This increase includes width of required high-speed rail trench and room for a fourth track.



Source: STV, 2015 (Figure not to scale)

Figure 3.4-4 Alternative 1 – Typical Aerial Cross-Section – Vernon and Commerce

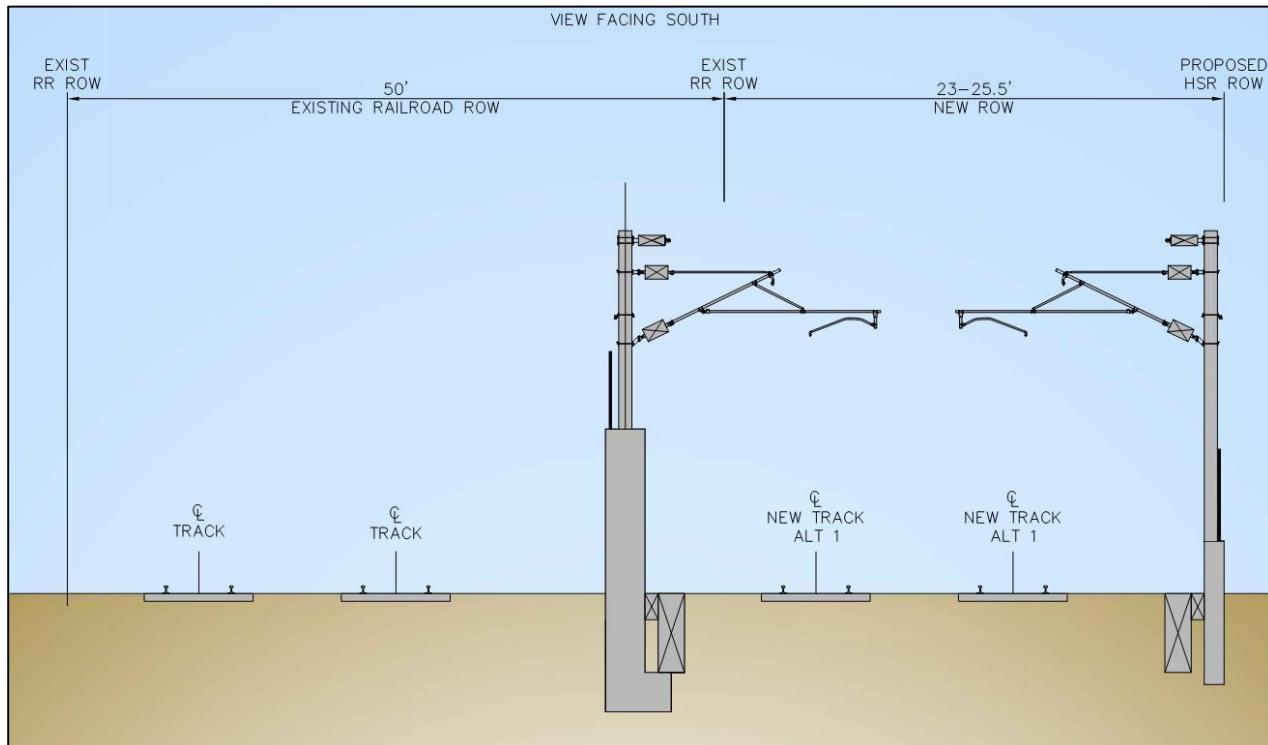


Source: STV, 2015 (Scale: 3/8"=1')

Figure 3.4-5 Alternative 1 – Typical Retained Cut Cross-Section – La Mirada

From Fullerton south toward Anaheim, Alternative 1 includes the construction of two new electrified tracks on the west side of the corridor. The existing ROW width is 100 feet. However, between La Palma Avenue and Vermont Avenue (approximately 1.5 miles) the ROW is reduced to 50 feet. Land uses abutting the ROW in this area are generally industrial south of Santa Ana Street in the 50-foot wide section, and generally residential to the north. Through this area two options were considered: to widen the ROW to accommodate the two new tracks or to bore a tunnel beneath the existing 50 foot ROW for the high-speed rail tracks. For the bored tunnel option beneath this 50-foot ROW, tunnel portals for the twin bore would be located in industrial areas near SR-91 in the north and Ball Road in the south. The

tunnels would run approximately 40-45 feet below-grade. Though both design options are able to fulfill the needs of Alternative 1 between Fullerton and Anaheim, the bored tunnel option would cost substantially more. Therefore Alternative 1 is the at-grade option. A typical cross-section through Anaheim toward the southern terminus is shown in Figure 3.4-6. Two new electrified tracks would be constructed at-grade alongside the two existing tracks. About 23-25.5 feet of ROW is needed in addition to the 50 feet of existing of railroad ROW.



Source: STV, 2015 (Figure not to scale)

Figure 3.4-6 Alternative 1 – Typical Cross-Section – Anaheim

The City of Anaheim has recently redirected its original request concerning 10 crossings in its jurisdiction. The Authority plans to grade separate Orangethorpe Avenue, La Palma Avenue, Ball Road, Cerritos Avenue, Broadway, and State College Boulevard in the City of Anaheim. The introduction of high-speed rail service in this area would be coordinated and incorporated into the design for Orangethorpe Avenue, Ball Road and State College Boulevard. High-Speed Rail would design and construct grade separations at La Palma Avenue, Broadway, and Cerritos Avenue. Sycamore Street and South Street are to be closed while Santa Ana Street will remain at-grade. The type of modification or improvement for Vermont Avenue has only preliminarily been evaluated. If an at-grade configuration is selected, the existing crossing protection would need to be analyzed to verify compliance with State (CPUC) and Federal (FRA) guidelines. Any crossings that are closed would require the construction of a pedestrian tunnel or bridge. The existing crossings have been upgraded to comply with these guidelines and the FRA authorized Quiet Zone standards. Locations of crossing modifications are shown in Figure 3.4-7.

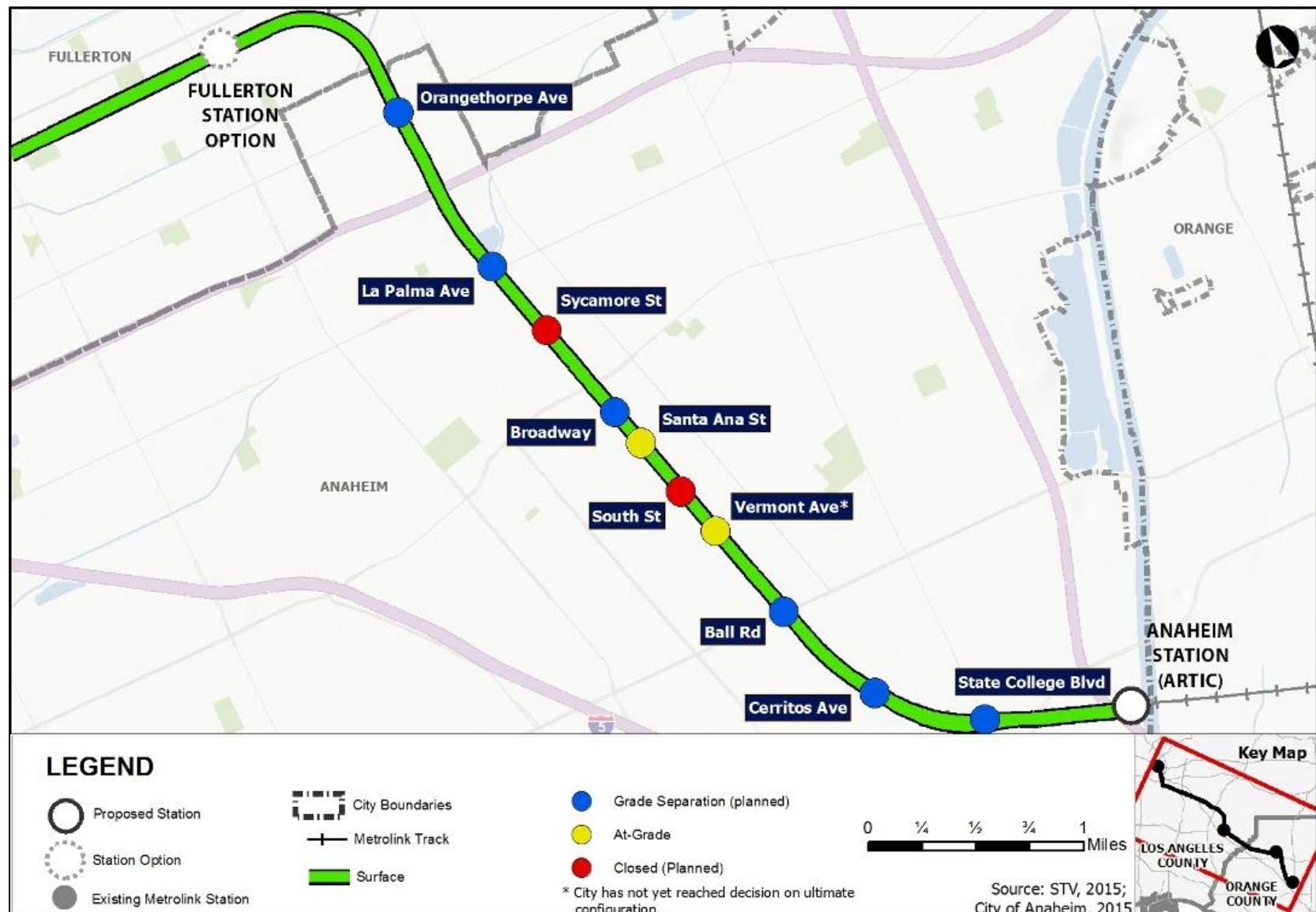


Figure 3.4-7 Anaheim Grade Modifications - Overview

3.4.2 Project Alternative: Alternative 2

Alternative 2 includes all the funded projects in the No Project Alternative and considers all the projects described in Section 3.3. Up to two new tracks would be constructed and existing tracks would be realigned. Alternative 2 would allow for up to 5 total tracks. Additionally, ancillary facilities (traction power substations, radio towers, etc.) required for both alternatives would also be installed adjacent to the right-of-way and would require additional ROW. In general, at its widest, Alternative 2 would require an additional 60 feet of ROW, at its narrowest Alternative 2 would require no additional ROW, and for the majority of the corridor Alternative 2 would require an additional 15 feet of ROW.

An overview of Alternative 2 is shown in Figure 3.4-8.

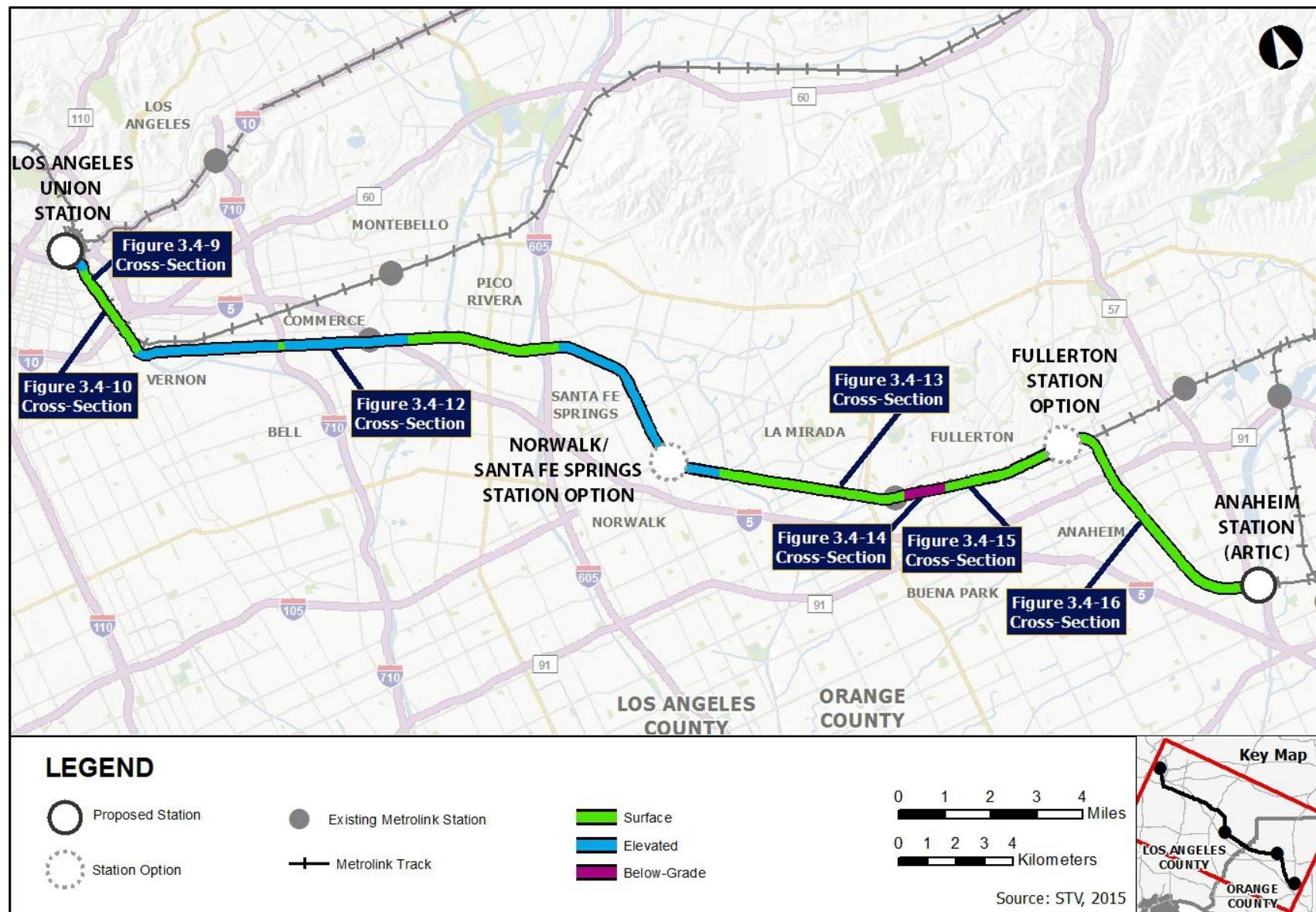
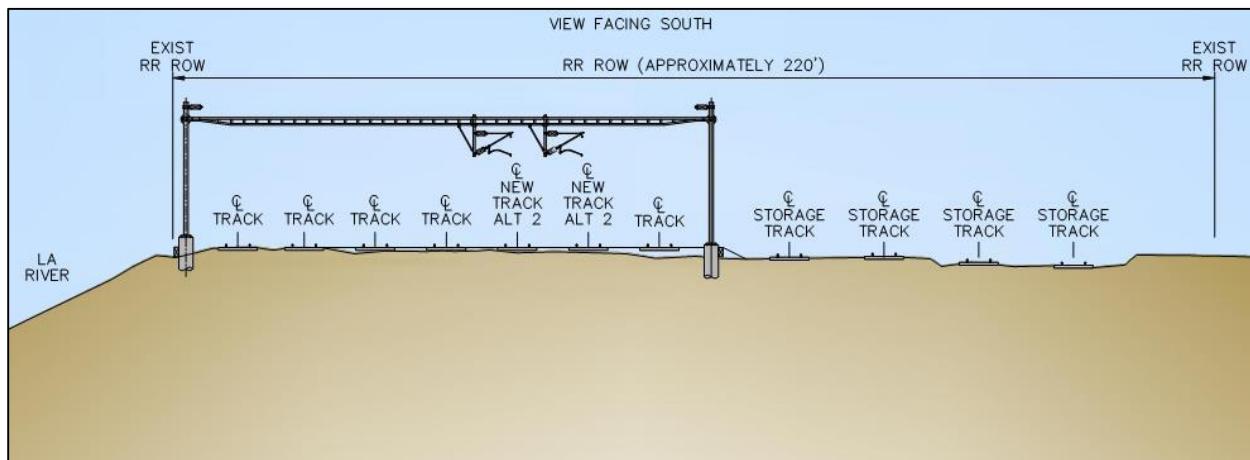


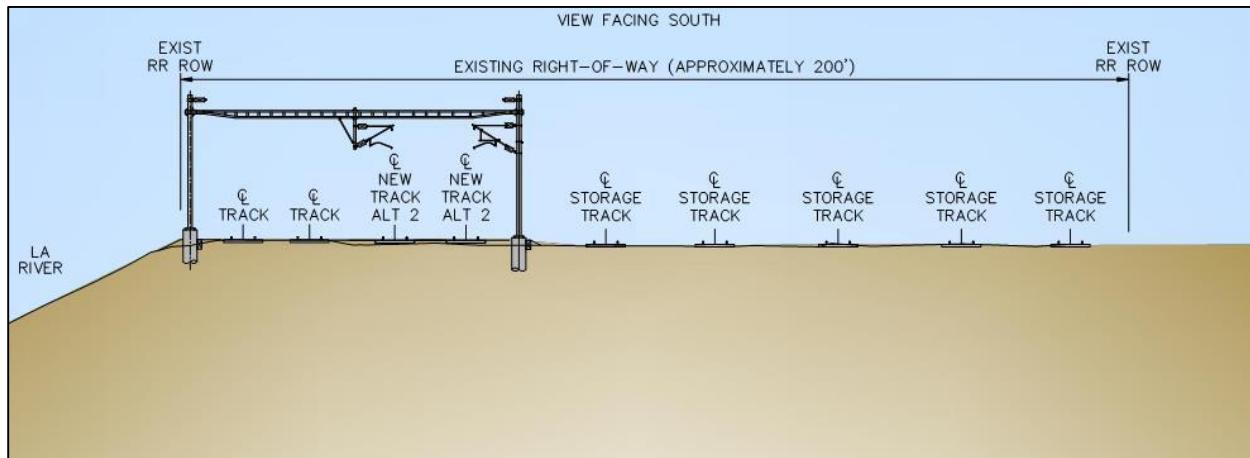
Figure 3.4-8 Overview – Alternative 2 Typical Cross-Section Approximate Locations

Under both LAUS station configurations for Alternative 2, the high-speed rail track alignment between LAUS and 1st Street would parallel SCRIP as planned by Metro. The alignment would run from LAUS to the LOSSAN corridor on an aerial structure between Commercial Street and Ducommun Street and would come down to grade just before the 1st Street Bridge. Alternative 2 would then run adjacent to and west of the existing Metrolink/Amtrak tracks, immediately east of Metro Red Line Yard. The LOSSAN corridor runs for several miles along the west bank of the Los Angeles River, before it turns to the east to cross the Los Angeles River and joins the BNSF San Bernardino Subdivision near the Los Angeles / Vernon border. Figure 3.4-9 and Figure 3.4-10 are representative cross-sections of the alignment in this area.



Source: STV, 2015 (Figure not to scale)

Figure 3.4-9 Alternative 2 – Typical Cross-Section – LA River West Bank: At-Grade South of LAUS

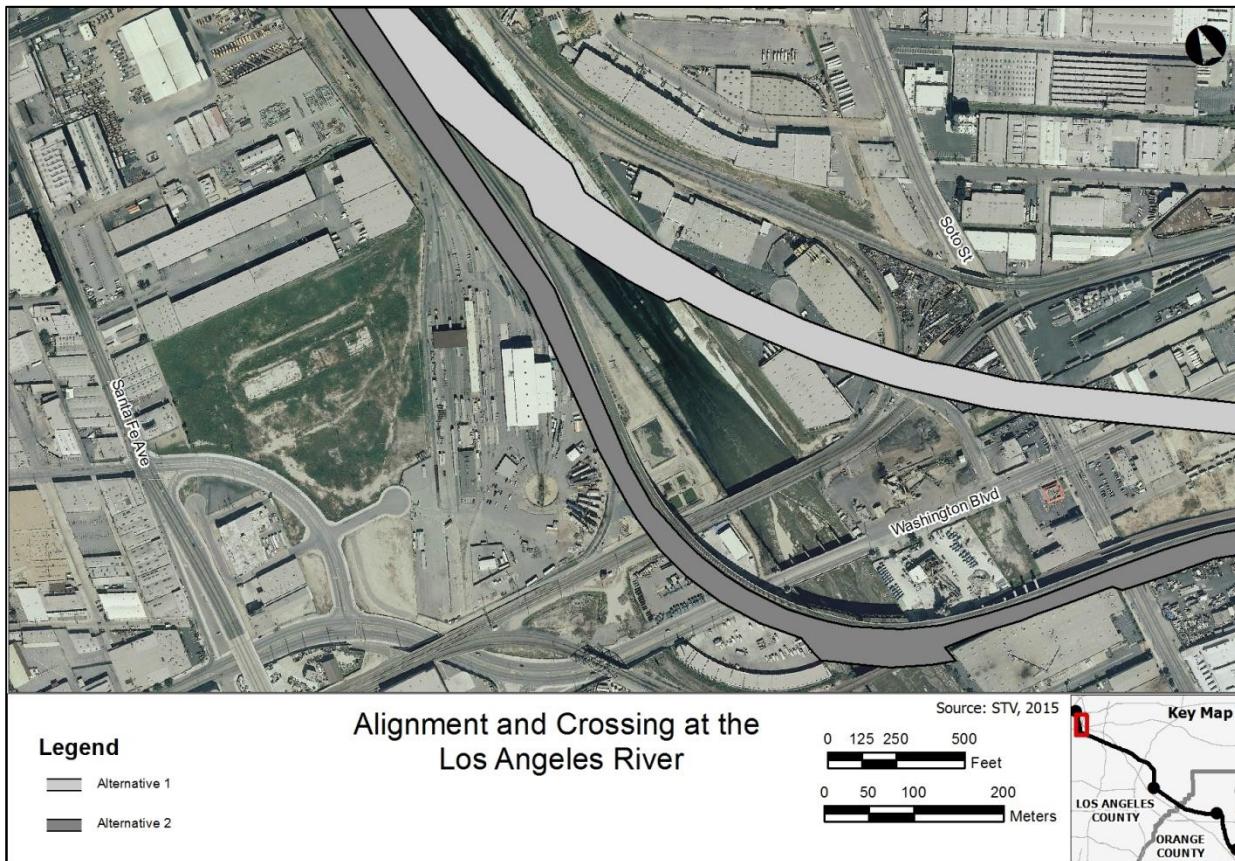


Source: STV, 2015 (Figure not to scale)

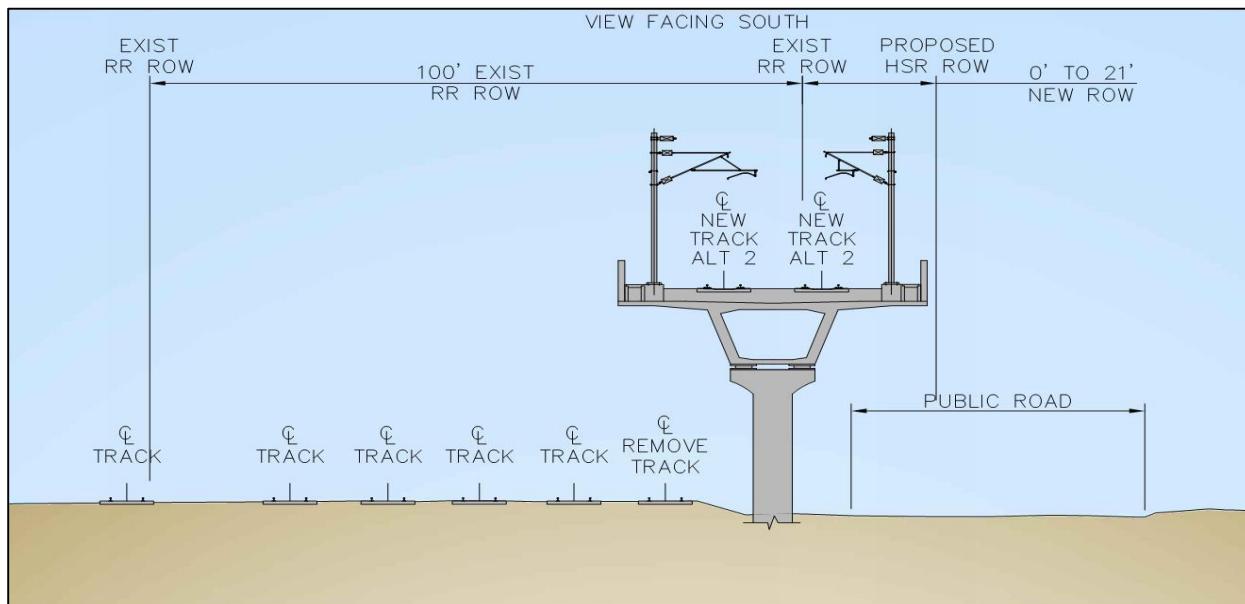
Figure 3.4-10 Alternative 2 – Typical Cross-Section – LA River West Bank: Approaching Redondo Junction

Along the Los Angeles River, two new tracks would be constructed between the existing Metrolink tracks and existing storage rail storage yards and maintenance facilities operated by Metro between 1st Street and 6th Street and by Amtrak between 6th Street and Washington Boulevard. There are four approach locations being considered to connect the Los Angeles to Anaheim Project Section with the Los Angeles to San Diego High-Speed Rail Section as part of Phase II. These connections are described fully in the March 3, 2011 Los Angeles to San Diego Preliminary Alternatives Analyses. Two of the proposed approach options would be located within this key area, and would head below grade and under the Los Angeles River in a tunnel before heading east towards the Inland Empire and then south to San Diego.

The conceptual alignment for Alternative 2 has further developed since the completion of the SAA in 2010. In the 2010 SAA, a new structure was considered over the Los Angeles River upstream of the existing bridge. Due to refinements made to reduce impacts, the alignment considered in this 2016 SAA would build the new bridge downstream of the existing bridge. As shown in Figure 3.4-11, the LA River bridge location is a key difference between the alternatives. Alternative 1 is located about 1,600 ft upstream of the existing bridge and requires eight 12 foot diameter piers in the river whereas Alternative 2 requires two 30 ft. diameter piers located directly downstream of the piers of the existing bridge.



From Vernon south toward Fullerton, two new tracks would be constructed for Alternative 2. Generally, Alternative 2 would utilize an at-grade configuration through Montebello and Pico Rivera, and from La Mirada to Anaheim. With combined at-grade and aerial cross-sections, Alternative 2 would require limited ROW acquisition along various stretches of this part of the alignment. A typical cross-section of the aerial configuration that would be used through Vernon, Bell, Commerce, and Santa Fe Springs is shown in Figure 3.4-12. Two new electrified aerial tracks would be constructed alongside the existing tracks through this portion of the alignment. Through these areas, additional ROW of up to 21 feet would be required.

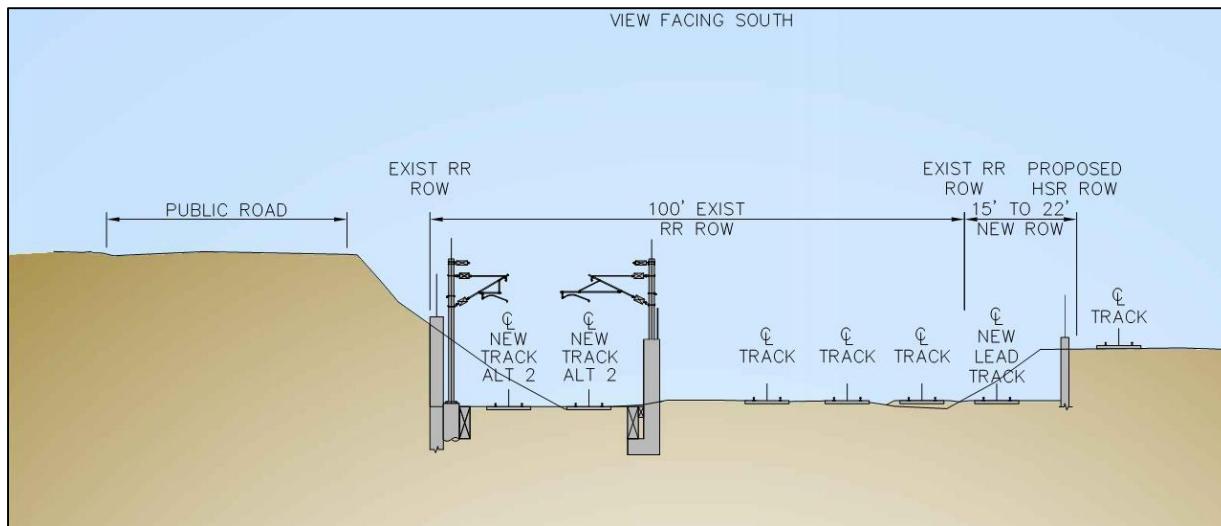


Source: STV, 2015 (Figure not to scale)

Figure 3.4-12 Alternative 2 – Typical Cross-Section – Vernon and Commerce

As discussed in Section 3.4.2, Alternative 2 requires five tracks while Alternative 1 requires six. Due to Alternative 2 having fewer tracks and a smaller footprint for construction and operation as compared to Alternative 1, additional design refinements were able to be incorporated into the five track configuration for Alternative 2 that were not applicable to the six track configuration for Alternative 1. While design was advancing for this alternative, FRA announced it was working on new crashworthiness performance standards for high-speed passenger rail equipment. These new standards would allow high-speed rail trains to operate in mixed use with conventional freight and passenger trains at speeds under 125 mph.¹⁵ Designs for Alternative 2 were updated to reflect these new standards with lower operating speeds and reduced horizontal separations. Once incorporated into the design, these changes diminished ROW impacts along the corridor. For example, the design changes made at-grade crossings possible underneath the I-710 and I-605 freeways, eliminating the tall viaducts at both locations that local stakeholders opposed. This design change also allowed options previously dismissed in the 2009 AA and 2010 SAA to be considered and carried forward in this 2016 SAA.

¹⁵ Federal Railroad Administration. (2013). Advisory Committee Recommends Passenger Rail Crashworthiness Standards to Accommodate High-Speed Rail. Retrieved from <http://www.fra.dot.gov/eLib/details/L04638>

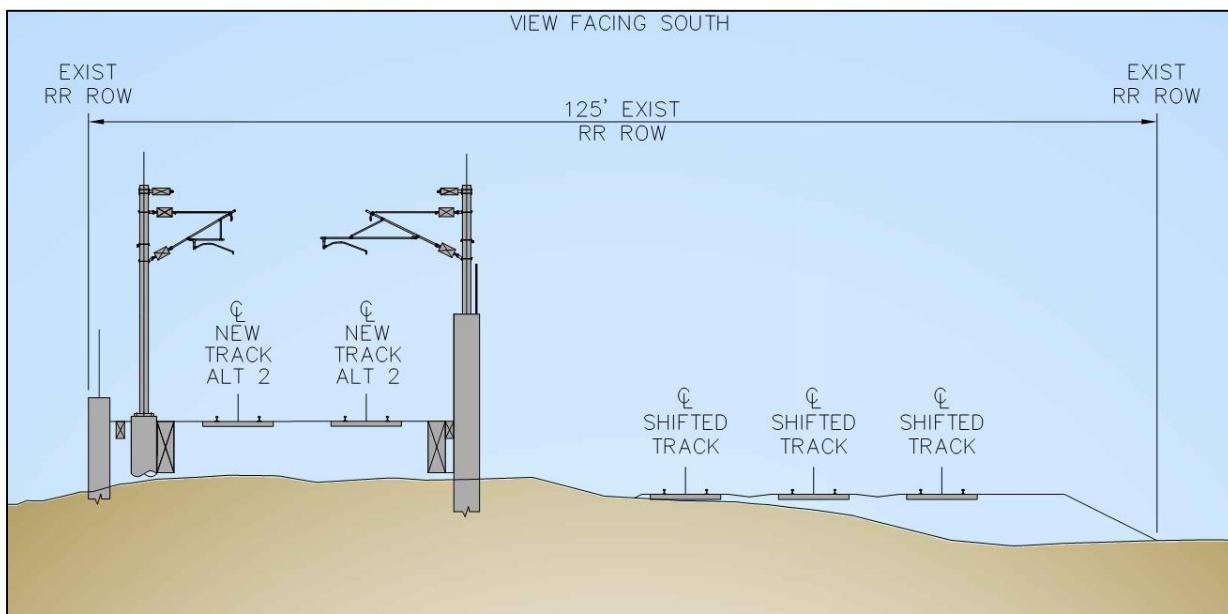


Source: STV, 2015 (Figure not to scale)

Figure 3.4-13 Alternative 2 - Typical Retained Cut Cross-Section - La Mirada

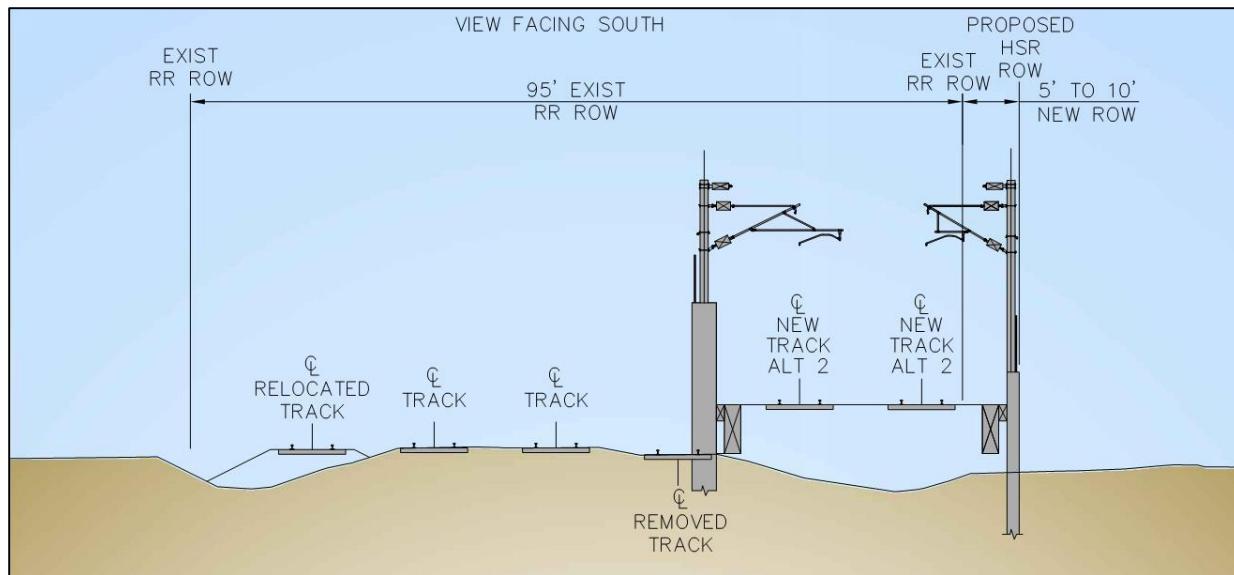
From La Mirada south towards Fullerton, the typical cross-section would be at-grade. Figure 3.4-13, Figure 3.4-14, and Figure 3.4-15 are examples of the various configurations in this area, with two new electrified tracks and the existing shifted tracks. Portions of it would fit in the existing railroad ROW, which ranges from 95 to 125 feet, while up to 22 feet of additional ROW would be needed in the northern part of this area (as seen in Figure 3.4-13) and up to 10 additional feet further south (as seen in Figure 3.4-15)

New bridges would be constructed over two existing water crossings: La Mirada Creek and Brea Creek. Five existing grade separations would require modifications and new structures for high-speed rail. Four additional crossings would require new structures for high-speed rail.



Source: STV, 2015 (Figure not to scale)

Figure 3.4-14 Alternative 2 – Typical At-Grade Cross-Section – Buena Park



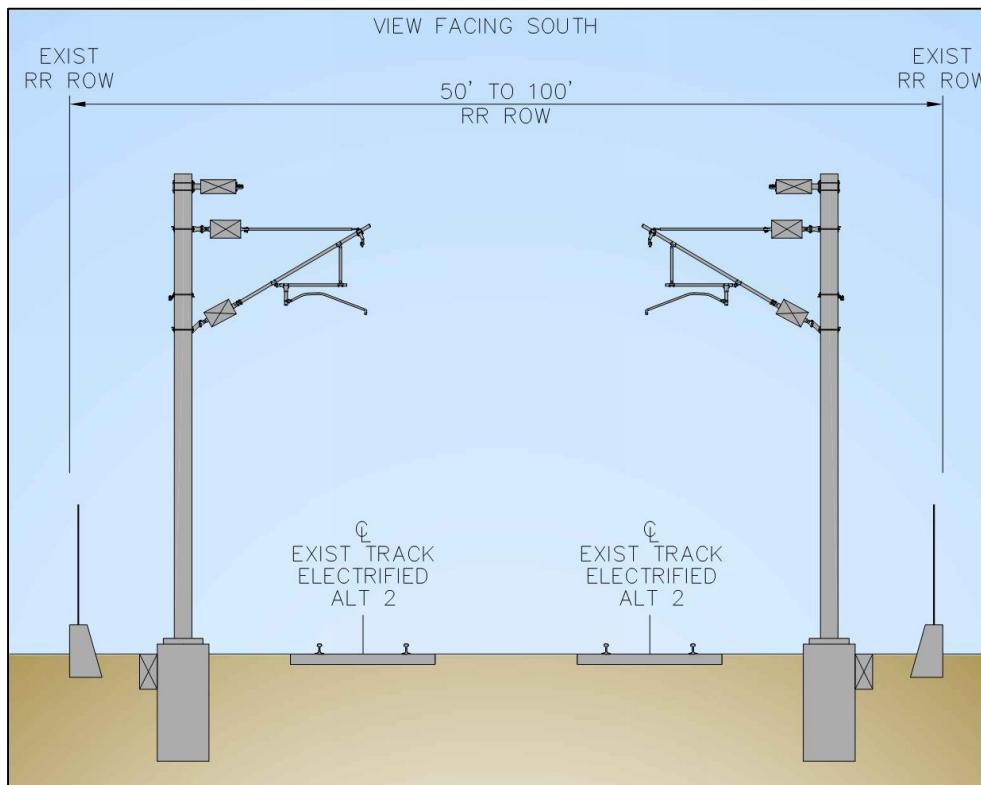
Source: STV, 2015 (Figure not to scale)

Figure 3.4-15 Alternative 2 Typical At-Grade Cross-Section - Fullerton

From Fullerton south toward Anaheim, the existing railroad ROW is 50 to 100 feet, with a 50-foot width for 1.5 miles between North Street and Vermont Avenue, and 100 feet wide otherwise. Land uses abutting the ROW are generally industrial south of Santa Ana Street in the 50-foot wide section, and generally residential to the north. Citrus Park and the Colony Historical District directly abut the ROW between Broadway and Lincoln Avenue. Four roadways currently cross the LOSSAN corridor at-grade in this area (Sycamore Street, Broadway, Santa Ana Street and South Street), with at-grade crossings at either end of this area as well (La Palma Avenue to the north, Vermont Avenue to the south). Lincoln Avenue crosses beneath the railroad tracks in an underpass structure near the center of the 50-foot wide section of ROW. There are currently two railroad tracks in this segment of the ROW, with one centered on the ROW and the second to the west. Different from Alternative 1, Alternative 2 would use and upgrade the existing infrastructure in this area as opposed to constructing new infrastructure. Figure 3.4-16 shows a typical cross-section for this area.

As with Alternative 1, the Authority has plans to grade separate Orangethorpe Avenue, La Palma Avenue, Ball Road, Cerritos Avenue, Broadway, and State College Boulevard in the City of Anaheim. Provisions for high-speed rail in the future would be coordinated and incorporated into the design for Orangethorpe Avenue, Ball Road and State College Boulevard. The Authority would design and construct grade separations at La Palma Avenue and Cerritos Avenue. Sycamore Street and South Street are to be closed while Santa Ana Street will remain at-grade. The type of modifications or improvements for Vermont Avenue will continue to be examined. If an at-grade configuration is selected, the existing crossing protection would need to be analyzed to verify compliance with State (CPUC) and Federal (FRA) guidelines. Any crossings that are closed would require the construction of a pedestrian tunnel or bridge. The existing crossings have been upgraded to comply with these guidelines and the FRA authorized Quiet Zone standards. Crossing modifications are shown in Figure 3.4-7.

The southern terminus of the Los Angeles to Anaheim High-Speed Rail Project Section is located at ARTIC. As shown in Figure 3.4-16, two new electrified tracks would be constructed at-grade within the existing railroad ROW with no additional ROW required.



Source: STV, 2015 (Figure not to scale)

Figure 3.4-16 Alternative 2 – Typical At-Grade Cross-Section – Anaheim

3.5 Stations

Individual station locations and configurations are not being screened as a part of this 2016 SAA and all station sites will be advanced for further design and evaluation in future technical planning documents. Both alternatives being evaluated in this 2016 SAA have very similar station design configurations, locations and conceptual project footprints. Track configurations and station layouts may necessitate reconstruction which could result in varying degrees of project impacts. These potential impacts will be evaluated in the future CEQA and NEPA environmental impact documents. Both alternatives include platforms at LAUS, Anaheim, and Norwalk/Santa Fe or Fullerton.

LAUS is located in the City of Los Angeles, north of Downtown and west of the Los Angeles River. It is immediately surrounded by a mix of industrial, commercial, and residential uses. LAUS serves as a hub for rail and bus transit services across the Los Angeles area, including Amtrak, Metrolink, Metro Rail, Metro Bus Rapid Transit, and local bus services. Currently, at-grade and aerial high-speed rail station configurations are being considered for this station for both Alternatives 1 and 2.

Norwalk/Santa Fe Springs Station Option is located in the City of Norwalk, just south of the City's border with the City of Santa Fe Springs along Imperial Highway and Bloomfield Avenue. This station currently serves Metrolink's Orange County Line and 91 Line. It is immediately surrounded by residential, industrial, and commercial uses. Station configurations currently being considered are East High-Speed Rail Station and No High-Speed Rail Station for Alternatives 1 and 2. A decision whether to build a high-speed rail stop at the Norwalk/Santa Fe Springs Station or Fullerton Station will be made in future environmental impact analysis.

Fullerton Station Option is located in the Fullerton Transportation Center in the City of Fullerton's downtown area. This station currently serves Metrolink's Orange County Line and 91 Line, Amtrak, and local bus services. It is immediately surrounded by residential and commercial uses. Station configurations currently being considered are No High-Speed Rail Station and At-Grade High-Speed Rail Station for Alternatives 1 and 2. A decision whether to build a high-speed rail stop at the Norwalk/Santa Fe Springs Station or Fullerton Station will be made in future analysis.

Anaheim Station (ARTIC) is located in the City of Anaheim. This station is just east of the existing Metrolink and Amtrak station that serves Metrolink's Orange County Line, Amtrak, and local bus services. It is immediately surrounded by commercial uses. Station configurations currently being considered are West At-Grade High-Speed Rail Station and Underground High-Speed Rail Station for Alternative 1. Although the East At-Grade High-Speed Rail Station was eliminated in the 2010 SAA, it is again being considered for Alternative 2 in response to public feedback. Coordination with the City of Anaheim and their ARC streetcar project team will be maintained to ensure the connection of regional rail with local destinations in Anaheim is available.

Stations characterized as optional will be analyzed in future environmental impact analysis technical documents with the same level of specificity as the other stations to be included in the Los Angeles to Anaheim.

4 Evaluation of Alternatives

Section 4 at a Glance—In this section you will find the following information:

- ▶ Project Alternative Comparison

4.1 Project Alternative Comparison

Several factors areas that will be thoroughly evaluated in further analysis have preliminary been evaluated for the purpose of this 2016 SAA. These areas include ROW Impacts, Tunnel/Cut and Cover, Capital Costs, Aerial Guideway, Section 4(f), public service, and public utilities. A summary of the data generated for these environmental resources is included in Appendix A. The key differences between Alternative 1 and Alternative 2 are summarized in Table 4.1-1.

Table 4.1-1 Summary of Key Differences between Alternative 1 and Alternative 2

Categories	Alternative 1	Alternative 2
ROW Impacts	2,012 Parcels Directly Impacted <ul style="list-style-type: none"> • 342 residential parcels • 1,239 business parcels 	1,380 Parcels Directly Impacted <ul style="list-style-type: none"> • 122 residential parcels • 904 business parcels
Tunnel/Cut and Cover	0.6 Miles of Tunnel/Cut and Cover	0.9 Miles of Tunnel/Cut and Cover
Aerial Guideway	12.5 Miles of Aerial Guideway	11.7 Miles of Aerial Guideway
Capital Costs	Baseline	Approximately 30% Lower Than Alternative 1
Parks and Recreational Resources	2.88 acres directly impacted in a total of 4 parks (3 are potential 4(f) resources)	0.92 acres directly impacted in a total of 3 parks (all 3 are potential 4(f) resources)
Trails and Bikeways	0.91 acres directly impacted of a total of 3 trails (all are potential 4(f) resources)	0.28 acres directly impacted of a total of 2 trails (all are potential 4(f) resources)
Schools	0.58 acres total of direct impacts at 2 schools	None
Historic Architectural Resources	29 directly impacted resources; 6 are potential 4(f) resources	9 directly impacted resources; 3 are potential 4(f) resources
Potential Roosting and Nesting Habitat*	12.74 acres of Potential Habitat	13.85 acres of Potential Habitat
Potential Burrowing Owl Habitat*	28.07 acres of Potential Habitat	10.31 acres of Potential Habitat
Wildlife Corridor*	53.62 acres	36.89 acres
Jurisdictional Waters and Wetland Resources	23.71 acres Non-wetland Waters of the US; 34.67 acres of California Department of Fish and Wildlife Jurisdictional Waters	8.13 acres Non-wetland Waters of the US; 15.76 acres of California Department of Fish and Wildlife Jurisdictional Waters

* The likelihood of these resources occurring along the corridor is considered to be low as none of the species or indicators of their roosting have been observed in the RSA during field studies conducted in August 2010.

Source: *Epic Land Solutions, 2014; ICF, 2014; STV 2014*

It should be noted that those identified as potential Section 4(f) resources require additional analysis to determine whether they would be protected under Section 4(f). For all resource areas evaluated for each of the two alternatives, only potential impacts and resources are identified as a part of this SAA. Because no impacts have been identified at this time, no avoidance alternatives have been evaluated as part of the conceptual design for the two build alternatives being considered.

ROW Impacts

Impacts were evaluated based on the conceptual project footprints for each of the two alternatives being placed on the existing railroad corridor in order to determine how many parcels would be directly impacted (full and partial property direct impacts were included).

Approximately 2,012 parcels would be directly impacted in order to develop Alternative 1. Approximately 1,380 parcels would be directly impacted in order to develop Alternative 2.

A directly impacted parcel does not necessarily need to be acquired, but that a parcel or part of the parcel may be needed to construct or operate high-speed rail at some point. Currently, the level of analysis does not exist to determine how many or which of these impacted parcels will need to be fully acquired. Further analysis of this will occur in subsequent reports.

Tunnel/Cut and Cover

Alternative 1 would require approximately 0.6 miles of tunnel/cut and cover. Alternative 2 would require approximately 0.9 miles of tunnel/cut and cover.

Aerial Guideway

Alternative 1 includes 12.5 miles of aerial guideway. Alternative 2 includes 11.7 miles of aerial guideway.

Capital Costs

Capital costs are driven by ROW impacts, tunnel/cut and cover, and aerial guideway. The differences between the two options in regards to these different categories are outlined above. Alternative 2 would impact fewer parcels and has fewer miles of aerial guideway as compared to Alternative 1. As a result, Alternative 2 is estimated to cost approximately 30 percent less than Alternative 1.

Parks and Recreational Resources

Due to its larger ROW impacts, Alternative 1 also would impact more parks and recreational resources. It would have a total 2.88 acres of direct impact on 4 parks, including the entirety of one park in its conceptual project footprint (Citrus Park in the City of Anaheim). Alternative 2 would directly impact 0.92 acres of 3 park and recreational resources.

Trails and Bikeways

Alternative 1 also impacts more trails and bikeways than Alternative 2. It would have a total 0.91 acres of direct impact on 3 trails and bikeways. Alternative 2 would directly impact 0.28 acres of 2 trails and bikeways. Publicly owned trails and bikeways are potential Section 4(f) resources and will be further evaluated for Section 4(f) eligibility during the environmental document stage.

Schools

Alternative 1 also would have greater impacts on schools than Alternative 2. Alternative 1 would impact two schools in Anaheim for a total of 0.58 acres of direct impact. Alternative 2 would have no direct impacts on schools.

Historic Architectural Resources

Alternative 1 would have greater direct impacts on historic architectural resources, directly impacting a total of 29 resources, 6 of these being potential 4(f) resources. Alternative 2 would directly impact 9 historic architectural resources, 3 of these being potential 4 (f) resources. Historic resources are potential Section 4(f) resources if they are listed or eligible under the National Register of Historic Places (NRHP). Not all eligible resources have been evaluated for inclusion in the NRHP. Table 4.1-2 gives the name and

location of impacted historical architectural resources for both alternatives, noting those protected under Section 4(f) or considered of local significance.

Table 4.1-2 Impacted Historic Architectural Resources

Property	Potential Section 4(f) Resource?*
ALTERNATIVE 1	
City of Los Angeles	
Macy Street Undercrossing – 2S2	Yes
530 Ramirez Street – Denny's	Yes
700 Jackson Street	No
729 E. Temple Street – 7R	No
1001 E. 1 st Street - 2S2	Yes
Olympic Boulevard Bridge – 2S2	Yes
City of Vernon	
Hobart Tower	No
4010 E. 26 th Street	No
4060 E. 26 th Street	No
City of Fullerton	
1747 W. Commonwealth Avenue	No
421 E. Walnut Avenue	No
201 W. Truslow Avenue – 1S	Yes
112 E. Walnut Avenue	No
Railroad Row at Lawrence	No
City of Anaheim	
La Palma Historic District	No
808 N. Pauline Street	No
Anaheim Historic District	No
700 E. Sycamore Street	No
900 Cypress Street	No
200 Vintage Lane	No
198 Vintage Lane	No
194 Vintage Lane	No
188 Vintage Lane	No
100 S. Atchison Street	Yes
223 S. Atchison Street	No
611 E. Broadway	No
605 E. Broadway	No
603 E. Broadway	No
520 E. Broadway	No
ALTERNATIVE 2	
City of Los Angeles	
Macy Street Undercrossing – 2S2	Yes
530 Ramirez Street – Denny's	Yes

Olympic Boulevard Bridge – 2S2	Yes
City of Vernon	
Hobart Tower	No
4010 E. 26 th Street	No
4060 E. 26 th Street	No
City of Pico Rivera	
8920 Rex Road	No
City of Fullerton	
1747 W. Commonwealth Avenue	No
Railroad Row at Lawrence	No

*Resources identified as potential Section 4(f) resources require additional analysis to determine whether they would be protected under Section 4(f). This analysis and resource-specific Section 4(f) determinations will be made as part of the environmental document.

Source: *ICF, 2014*

Potential Section 4(f) Resources

Many of the sensitive land use resources discussed earlier in this section are potentially protected under Section 4(f) of the U.S. Department of Transportation Act. Section 4(f) applies to two types of resources: (1) public owned parks, recreation areas, and wildlife or waterfowl refuges and (2) significant historical sites of national, state, or local significance located on public or private land. Table 4.1-3 is a summary of these previously discussed sensitive land uses that are potentially Section 4(f) resources. It is important to note that further analysis is required to determine Section 4(f)'s applicability to these resources.

Table 4.1-3 Potential Section 4(f) Resources

Categories	Alternative 1	Alternative 2
Parks and Recreational Resources	<p>3 potential 4(f) resources:</p> <ul style="list-style-type: none"> • Pooch Park, Fullerton (0.56 acre of direct impact of 1.54 acres of parkland) • Independence Park/ Janet Evans Swim Complex, Fullerton (0.54 acre of direct impact of 10 acres of parkland) • Citrus Park, Anaheim (1.76 acres of direct impact of 1.76 acres of parkland) 	<p>3 potential 4(f) resources:</p> <ul style="list-style-type: none"> • Pooch Park, Fullerton (0.56 acre of direct impact of 1.54 acres of parkland) • Independence Park/ Janet Evans Swim Complex, Fullerton (0.26 acre of direct impact of 10 acres of parkland) • Citrus Park, Anaheim (0.1 acres of direct impact of 1.76 acres of parkland)
Trails and Bikeways	<p>3 potential 4(f) resources:</p> <ul style="list-style-type: none"> • Rio Hondo Bike Trail • San Gabriel River Trail • Santa Ana River Trail 	<p>2 potential 4(f) resources:</p> <ul style="list-style-type: none"> • Rio Hondo Bike Trail • San Gabriel River Trail
Historic Archeological Resources	5 potential 4(f) resources	5 potential 4(f) resources
Historic Architectural Resources	<p>6 potential 4(f) resources:</p> <ul style="list-style-type: none"> • Macy Street Under Crossing – 2S2 (City of Los Angeles) • 530 Ramirez Street-Denny's (City of Los Angeles) • 1001 E 1st Street 2S2 (City of Los Angeles) • Olympic Boulevard Bridge – 2S2 (City of Los Angeles) • 201 W Truslow Avenue – 1S (City of Fullerton) • 100 S Atchison Street (City of Fullerton) 	<p>3 potential 4(f) resources:</p> <ul style="list-style-type: none"> • Macy Street Under Crossing – 2S2 (City of Los Angeles) • 530 Ramirez Street-Denny's (City of Los Angeles) • Olympic Boulevard Bridge – 2S2

This table indicates only potential Section 4(f) resources. Determining whether a resource is protected by Section 4(f) requires additional analysis that will be conducted in future stages of environmental impact analysis.

Source: *ICF, 2014*

Wildlife Impacts

Generally Alternative 1 would have greater potential impacts on wildlife than Alternative 2, as Alternative 1 would require more ROW. It should be noted that the likelihood of protected wildlife resources occurring in the project area is considered low.

Alternative 1 would directly impact 12.74 acres of potential roosting and nesting habitat, 28.07 acres of potential Burrowing Owl habitat, and 53.62 acres of wildlife corridor.

Alternative 2 would directly impact 13.85 acres of potential roosting and nesting habitat, 10.31 acres of potential Burrowing Owl habitat, and 36.89 acres of wildlife corridor.

Waters and Wetlands Impacts

Alternative 1 would have greater impacts on jurisdictional waters and wetlands resources than Alternative 2.

Alternative 1 would have 23.71 acres of direct impact on Non-wetland Water of the US (waters under the jurisdiction of the Clean Water Act Section 404) and 34.67 acres of direct impact on California Department of Fish and Wildlife (CDFW) jurisdictional waters.

Alternative 2 would have 8.13 acres of direct impact on Non-wetland Water of the US and 15.76 acres of direct impact on CDFW jurisdictional waters.

4.1.1 Project Alternatives Evaluation: Areas of No Difference

At the current level of design and analysis, both alternatives measure similarly under several criteria. Table 4.1-4 lists these areas of similarity.

Table 4.1-4 Evaluation Criteria with No Difference between Alternatives

Categories	Evaluation Measure
Purpose & Need	<ul style="list-style-type: none"> • Relieve congestion on I-5 and surrounding freeways • Relieve capacity constraints at Los Angeles area airports • Maximize connectivity and accessibility • Maximize ridership/revenue potential
Design Objectives	<ul style="list-style-type: none"> • Ridership/revenue potential • Intermodal connections • Operating costs
Constructability	<ul style="list-style-type: none"> • Construction access issues
Land Use	<ul style="list-style-type: none"> • Station area development potential/potential for TOD • Property access issues • Proximity to landfills • Station area traffic effects • Grade crossing traffic effects
Environmental Resources	<ul style="list-style-type: none"> • Agricultural lands impacted • Visual/scenic resources impacts • Geologic/soil constraints

5 Recommendation

As described in Section 3.4, two project build alternatives are analyzed in this report in addition to the No Project Alternative: Alternative 1 and Alternative 2. Both alternatives meet travel time and ridership objectives, provide mass transit, highway, and airport connectivity to major urban centers, and maximize ridership and revenue potential. As evaluated in Section 4.1 and Appendix A, Alternative 2 would have fewer ROW impacts, have approximately 30 percent lower capital costs, have less impact on parks, trails and bikeways, schools, historic architectural resources, and generally have less impacts on waters and wetlands, and wildlife, and satisfy the needs of the blended system implementation. Therefore, the No Project Alternative and Alternative 2 (see Figure 4.1-1) are selected to be carried forward for further analysis.

Project Alternatives to be Carried Forward

No Project Alternative

Project Alternative 2

Stations:

- Los Angeles Union Station (LAUS)
- Norwalk/Santa Fe Springs (Optional)
- Fullerton (Optional)
- ARTIC (Anaheim Regional Transportation Intermodal Center)

Each of these stations and optional stations are described in Section 3.5.3 of this 2016 SAA. While Norwalk/Santa Fe Springs and Fullerton are optional stations, they will be analyzed in future environmental documents with the same level of detail as the LAUS and ARTIC stations.

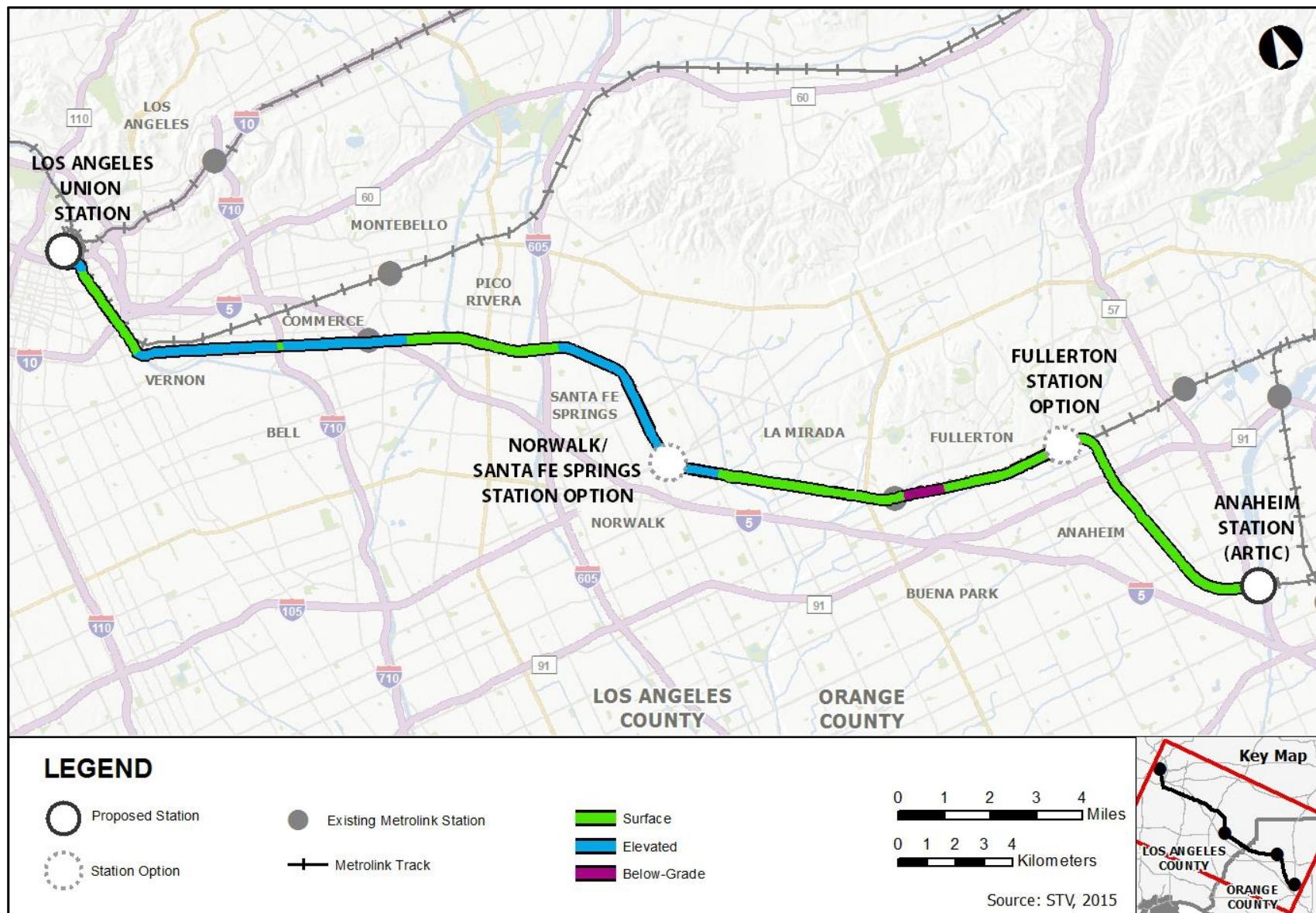


Figure 4.1-1 Build Alternative (Alternative 2) to be Carried Forward

Appendix A

Detailed Evaluation Tables

Table A-1 Detailed Evaluation Table – Los Angeles to Anaheim Project Section Alternatives

Measurement Criteria	Alternative 1	Alternative 2
Purpose & Need		
Relieve congestion on I-5 and surrounding freeways	Common to both alternatives As both alternatives have similar ridership numbers, congestion relief would be similar for both alternatives. ¹⁶	
Relieve capacity constraints at Los Angeles area airports	Common to both alternatives As both alternatives have no direct link to Los Angeles area airports, congestion relief would be similar for both alternatives.	
Maximize connectivity and accessibility	Common to both alternatives Both alternatives would connect to other modes of transit at stations at LAUS, Norwalk/Santa Fe Springs (optional), Fullerton (optional), and ARTIC.	
Minimize disruption to neighborhoods and communities	Approximate # of total Parcels Touched (full & partial): 2012 It is anticipated that this alternative would displace more businesses and/or residences, as it would require more ROW along much of the segment between Vernon and Fullerton, as well as through Anaheim if an at-grade configuration is used.	Approximate # of total Parcels Touched (full & partial): 1380 It is anticipated that this alternative would have less impact to neighborhoods and communities, as it would require limited less ROW along much of the segment between Vernon and Fullerton.
Preserve environmental quality and protect sensitive resources	In general, Alternative 1 would impact sensitive resources more than Alternative 2. More detailed descriptions of each alternative for potential environmental effects are described below.	In general, Alternative 2 would impact sensitive resources less than Alternative 1. Alternative 2 would have impacts on a few types of resources and environmental quality that are greater than Alternative 1. More detailed descriptions of each alternative for potential environmental effects are described below.
Maximize ridership/revenue potential	Common to both alternatives Both High-Speed Rail alternatives fulfill the ridership needs. Revenue potential is the same for both alternatives.	
Minimize capital and operating costs	This alternative would have higher capital costs as it would impact more properties, but would have the same operating cost because of fixed ridership.	This alternative would have lower capital costs as it would impact fewer properties, and have the same operating costs as Alternative 1 due to fixed ridership.
Design/Objectives		
Ridership / Revenue Potential	Common to both alternatives There is no difference between the two alternatives.	

¹⁶ California High-Speed Train Los Angeles to Anaheim Supplemental Alternative Analysis Report, July 2010

Table A-1 Detailed Evaluation Table – Los Angeles to Anaheim Project Section Alternatives (continued)

Measurement Criteria	Alternative 1	Alternative 2
Intermodal Connections	Common to both alternatives Both alternatives would connect to other modes of transit at stations at LAUS, Norwalk/Santa Fe Springs (optional), Fullerton (optional), and ARTIC.	
Tunnel/Cut & Cover Length	Total: 0.6 miles	Total: 0.9 miles
Capital Costs	This alternative would have a high baseline capital cost for the Los Angeles to Anaheim Section. It would have extensive ROW impacts for much of the segment between Vernon and Fullerton, with many full parcels impacted due to the needed ROW width. It would require aerial structures through several sections of alignment, and the realignment of much of the existing tracks to accommodate 6 tracks.	This alternative would have a lower capital cost for the Los Angeles to Anaheim Section. It would require additional ROW for much of the segment between Vernon and Fullerton, but there would be fewer full parcels impacted as compared to the Alternative 1. It would require aerial structures through several sections of alignment, and realignment of much of the existing tracks. Alternative 2 would cost approximately 30% less than Alternative 1.
Operating Costs	Common to both alternatives Operating costs would be the same for both alternatives.	
Constructability		
Construction Access Issues	Common to both alternatives Both alternatives would use the existing grade crossings along the corridor to access the existing LOSSAN corridor ROW.	
Railroad Impacts	This alternative would generally be constructed outside the conceptual project footprint of the existing railroad corridor, allowing much of the existing track and many existing structures to continue to function during and after construction. High-speed rail construction has the potential to impact passenger and freight rail operations.	This alternative would have more significant railroad impacts due to the need to shift existing tracks and reconstruct many existing bridges between Vernon and Fullerton. High-speed rail construction has the potential to impact passenger and freight rail operations.
Utility Impacts	This alternative would have fewer utility impacts. Utilities crossing the corridor would generally be located at crossing streets with occasional crossing corridor between street crossings. For these utility crossings, both alternatives would probably impact the same number, size and type system. For those utility systems located within the corridor itself, this alternative does not require the same amount of utility realignment as Alternative 2 due to less track realignment.	This alternative would have more utility impacts. Utilities crossing the corridor would generally be located at crossing streets with occasional crossing corridor between street crossings. For these utility crossings, both alternatives would probably impact the same number, size and type system. For utilities located within the corridor, (i.e. fiber optic cables, gas and oil pipelines, etc.) this alternative would have a greater impact. The reason is due to the required track relocation or realignment needed to make room for the new shared tracks.
Land Use		
Station Area Development Potential/Potential for TOD	Common to both alternatives Under both alternatives, the stations would be in approximately the same location and therefore the TOD potential would be comparable.	

Table A-1 Detailed Evaluation Table – Los Angeles to Anaheim Project Section Alternatives (continued)

Measurement Criteria	Alternative 1	Alternative 2
Consistency with Other Planning Efforts	<p>In addition to the impacts mentioned for Alternative 2, this alternative would cause substantial change to patterns of land use by eliminating or greatly reducing parks (Citrus Park, specifically), medium, and low-medium residential designations, consequently also disrupting existing historic land use patterns in Anaheim; and this alternative with the at-grade alignment through Anaheim and with at-grade connection to Anaheim West Maintenance Yard and ARTIC Station would conflict with the City of Anaheim's policies associated with historic preservation.</p>	<p>Coordination is currently ongoing to include the project, but since the alignments are identical for both alternatives at LAUS, they have the same impacts in regard to LAUS. With regard to Station Planning, Land Use and Development, the alternatives would conflict with the City of Los Angeles's <i>Los Angeles River Revitalization Master Plan</i> in; both alternatives would replace the one pedestrian-friendly connection (highly visible pedestrian bridge) with a less visible and potentially less desirable pedestrian tunnel between the pedestrian-oriented multifamily land use south of Fullerton Transportation center and the pedestrian-oriented downtown; and both would conflict with the City of Fullerton's General Plan's Downtown and Transportation center policies.</p>
Disruption to Communities		
Displacements (Residential and Business)	<p>It is anticipated that this alternative would impact more businesses and/or residences, as it would require much more ROW along much of the segment between Vernon and Fullerton, as well as through Anaheim, as needed for the Alternative 2.</p> <p>Residences and businesses that may be displaced include up to:</p> <ul style="list-style-type: none"> • 342 residential parcels • 1,239 business parcels 	<p>It is anticipated that this alternative would have minimal displacement of businesses and residences, as it would have limited ROW impacts along much of the segment between Vernon and Fullerton.</p> <p>Residences and businesses that may be displaced include up to:</p> <ul style="list-style-type: none"> • 122 residential parcels • 904 business parcels
Property Access Issues	<p>Common to both alternatives</p> <p>Based on the level of design that is currently available for the two options, property access issues appear to be comparable for both alternatives.</p>	
Proximity to Schools	<p>Due to its generally greater ROW requirements, Alternative 1 would have greater impacts on schools than Alternative 2. Alternative 1 directly impacts 0.22 acres of Thomas Jefferson Elementary School (school property total of 5.76 acres) and 0.36 acres of Olive Street Elementary School (school property total of 5.96 acres). Both of these schools are located in the City of Anaheim.</p> <p>No impacts (or "use") related to Section 4(f) is assumed for these two resources as the portion of the schools impacted are parking facilities, not public recreational resources.</p>	<p>Alternative 2 would not directly impact schools. Potential indirect impacts to schools will be analyzed in depth in the project-level environmental document.</p>
Proximity to Landfills	<p>Common to both alternatives</p> <p>Both alternatives would be constructed and operated within the same ROW. There would be a negligible difference in distance between the two alternatives.</p>	

Table A-1 Detailed Evaluation Table – Los Angeles to Anaheim Project Section Alternatives (continued)

Measurement Criteria	Alternative 1	Alternative 2
Station Area Traffic Effects	Common to both alternatives Both alternatives have the same station locations.	
Grade Crossing Traffic Effects	Common to both alternatives For both alternatives, except for the possibility of having three at-grade crossings in Anaheim, and two road closures, most grade crossings would be grade-separated to reduce possible impacts.	
Environmental Resources		
Waterways / Sensitive Habitat Areas	The number of columns/piers placed in 6 waterways crossings – 29 piers or columns. <i>Direct Impacts to Water Resources:</i> Non-wetland Waters of the US – 23.17 acres; Wetland waters of the US – 0.01 acres; CDFW Jurisdiction – 34.67 acres; CDFW Non-jurisdiction – 0 acres <i>Direct Impacts to Potential Sensitive Habitat:</i> Bat Roosting and Colonial Bird Nesting – 12.74 acres; Burrowing Owl – 28.07 acres; Wildlife Corridor – 53.62 acres	The number of columns/piers placed in 6 waterways crossings – 16 piers or columns. <i>Direct Impacts to Water Resources:</i> Non-wetland Waters of the US – 8.13 acres; Wetland waters of the US – 0.002 acres; CDFW Jurisdiction – 15.76 acres; CDFW Non-jurisdiction – 0.06 acres <i>Direct Impacts to Potential Sensitive Habitat:</i> Bat Roosting and Colonial Bird Nesting – 13.85 acres; Burrowing Owl – 10.31 acres; Wildlife Corridor – 36.89 acres

Table A-1 Detailed Evaluation Table – Los Angeles to Anaheim Project Section Alternatives (continued)

Measurement Criteria	Alternative 1	Alternative 2
Potential Section 4(f) and 6(f) Resources	<p>wildlife or waterfowl refuges:</p> <p>There are no known officially designated wildlife or waterfowl refuges with the study area; therefore, no impacts related to Section 4(f) are anticipated at this time. Final determination of Section 4(f) impacts would require outreach to local jurisdictions and conservation authorities within the corridor to determine the presence or absence of these resources. Further analysis and final determination of Section 4(f) impacts would occur in the project-level environmental document.</p> <p><i>Cultural Resources:</i></p> <p>5 Archeological Sites in the Alternative 1 conceptual project footprint, 2 of these sites are assumed to be Section 4(f) resources although further study is likely to determine protection is not warranted, as Section 4(f) protection applies only when preservation of resources at the site of its discovery is required.</p> <p>These sites are common to both alternatives.</p> <p>29 Historical Architectural Sites would be directly impacted by Alternative 1, 6 of these sites are Section 4(f) resources as they are eligible under the National Record of Historic Places.</p> <p><i>School Recreation Sites:</i></p> <p>Areas of schools directly impacted by Alternative 1 are comprised of school associated parking facilities. For this reason, while the play areas on these school grounds are potentially protected by Section 4(f), no impacts (or “use”) related to Section 4(f) are anticipated for these two resources.</p> <p><i>Trails:</i></p> <p>Alternative 1 would have a greater direct impact on trails than Alternative 2. It would directly impact 3 trails: Rio Hondo Bike Path, San Gabriel River Trail, and Santa Ana River Trail, for a total of 0.91 acres. Trails are potential 4(f) resources.</p> <p><i>Determination of Section 4(f) eligibility of school recreational sites and trails and the nature of any impacts to them would require research, outreach to agencies of jurisdiction within the corridor to determine the presence or absence of these resources. Further analysis and final determination of Section 4(f) impacts would occur in the project-level environmental document.</i></p>	<p>wildlife or waterfowl refuges:</p> <p>There are no known officially designated wildlife or waterfowl refuges with the study area; therefore, no impacts related to Section 4(f) are anticipated at this time. Final determination of Section 4(f) impacts would require outreach to local jurisdictions and conservation authorities within the corridor to determine the presence or absence of these resources. Further analysis and final determination of Section 4(f) impacts would occur in the project-level environmental document.</p> <p><i>Cultural Resources:</i></p> <p>5 Archeological Sites in the Alternative 2 conceptual project footprint, 2 of these sites are assumed to be Section 4(f) resources although further study is likely to determine protection is not warranted, as Section 4(f) protection applies only when preservation of resources at the site of its discovery is required. These sites are common to both alternatives.</p> <p>Nine Historical Architectural Sites would be directly impacted by Alternative 2, 3 of these sites are Section 4(f) resources as they are eligible under the National Record of Historic Places.</p> <p><i>School Recreation Sites:</i></p> <p>Alternative 2 would have no direct impact on potentially Section 4(f) protected school parklands.</p> <p><i>Trails:</i></p> <p>Alternative 2 would directly impact 2 trails: Rio Hondo Bike Path and San Gabriel River Trail, for a total of 0.28 acres. Trails are potential 4(f) resources.</p> <p><i>Determination of Section 4(f) eligibility of school recreational sites and trails and the nature of any impacts to them would require research, outreach to agencies of jurisdiction within the corridor to determine the presence or absence of these resources. Further analysis and final determination of Section 4(f) impacts would occur in the project-level environmental document.</i></p>

Table A-1 Detailed Evaluation Table – Los Angeles to Anaheim Project Section Alternatives (continued)

Measurement Criteria	Alternative 1	Alternative 2
Agricultural Lands	Common to both alternatives Not applicable. There are no agricultural lands within the project area that would be affected by either alternative.	
Noise / Vibration	This alternative may have significant impacts in areas of the alignment that border residential communities, but this Alternative does not require a relocation of all tracks within the corridor.	This alternative would require moving some existing diesel emitting rail service tracks closer to existing sensitive receptors, and in some cases above existing grade by an approximately of 30 feet.
Greenhouse Gases	Common to both alternatives For both alternatives, the introduction of high-speed rail into the corridor would likely result in a decrease in greenhouse gas emissions as transit users and drivers shift from emissions-generating travel modes to electrified high-speed rail service.	
Air Quality	Common to both alternatives For both alternatives, the introduction of high-speed rail into the corridor would likely result in a decrease in air quality impacts as transit users and drivers shift from emissions-generating travel modes to electrified high-speed rail service.	
Visual/Scenic Resources	Common to both alternatives Each of the alternatives would result in substantial aesthetics and visual quality impacts, some of which could not be avoided or reduced to a less-than-substantial level by mitigation. Operational impacts that would be substantial and could not be mitigated below consequential levels would occur at several locations (LAUS, Fullerton Transportation Center, and Anaheim Colony Historic District) and include incompatible visual elements, removal of several important visual features, and creation of incompatible shade or shadow conditions. These impacts are equivalent for either High-Speed Rail build alternative, and therefore do not distinguish one build alternative from the other with regard to potential impacts to aesthetics and visual quality.	
Geologic / Soil Constraints	Common to both alternatives There are no known geologic or soils constraints for either alternative.	
Hazardous Materials	Potential for hazardous materials impacts given the alignment runs in areas typically contaminated with hazardous materials (railroad ROWs and industrial areas). Impact may be greater than Alternative 2 given the larger ROW required.	Potential for hazardous materials impacts given the alignment runs in areas typically contaminated with hazardous materials (railroad ROWs and industrial areas).

Appendix B

Outreach Tracking Matrix

Table B-1 Outreach Tracking Matrix

No.	Date	Meeting	Category ¹⁷	Jurisdiction
1	7/1/2010	Orange County Cities Technical Meeting	TAG/TWG	Orange County
2	7/1/2010	Corridor Cities TWG	TAG/TWG	Corridor Cities
3	7/1/2010	Briefing with LA Mayor's Office	B	Los Angeles City
4	7/10/2010	Venice Eco Fest (O)	P	Venice
5	7/13/2010	LA Area Chamber of Commerce Transportation Committee	TAG/TWG	LA Area
6	7/13/2010	OCBC Infrastructure Committee	TAG/TWG	Orange County
7	7/20/2010	91/605/405 TAC Meeting	TAG/TWG	Corridor Cities
8	7/21/2010	Bi-Weekly Meeting with OCTA & Anaheim	AS	Orange County
9	7/21/2010	Montebello Alignment Review Meeting	AS	Montebello
10	7/27/2010	Pico Rivera Alignment Review Meeting	AS	Pico Rivera
11	7/27/2010	Commerce Alignment Review Meeting	AS	Commerce
12	7/28/2010	Anaheim Alignment Review Meeting	AS	Anaheim
13	7/28/2010	Vernon Alignment Review Meeting	AS	Vernon
14	7/29/2010	Norwalk Alignment Review Meeting	AS	Norwalk
15	7/29/2010	Buena Park Alignment Review Meeting	AS	Buena Park
16	7/29/2010	Fullerton Alignment Review Meeting	AS	Fullerton
17	8/3/2010	ARTIC Station Charrette	AS	Orange County
18	8/3/2010	Norwalk-SFS Station Charrette	AS	Norwalk / Santa Fe Springs
19	8/3/2010	Fullerton Station Charrette	AS	Fullerton
20	8/3/2010	LAUS Station Charrette	AS	Los Angeles County
21	8/5/2010	Santa Fe Springs Alignment Review Meeting	AS	Santa Fe Springs
22	8/16/2010	Norwalk/SFS Station Parking/Traffic Meeting	AS	Norwalk / Santa Fe Springs
23	8/16/2010	SFS/La Mirada Meeting Re Valley View	AS	Santa Fe Springs / La Mirada

¹⁷ P: Public; TAG/TWG: Technical Assessment/Working Group; PWG: Policy Working Group; GIO: General Interested Organization; STO: Stakeholder Organization; B: Briefing; AS: Agency Staff; ML: Media

Table B-1 Outreach Tracking Matrix (continued)

No.	Date	Meeting	Category ¹⁷	Jurisdiction
24	8/16/2010	Gateway Cities Technical Working Group	TAG/TWG	Gateway Cities
25	8/16/2010	Anaheim 5 Project Briefing	STO	Orange County
26	8/16/2010	Montebello Maintenance Facility Coordination	AS	Montebello
27	8/16/2010	Follow-up Meeting with Commerce	AS	Commerce
28	8/18/2010	Bi-Weekly Meeting with OCTA & Anaheim	AS	Orange County
29	8/24/2010	LAUS Station Charrette	AS	Los Angeles City
30	8/24/2010	LAUS Station Charrette Follow-up Meeting	AS	Los Angeles County
31	8/26/2010	Office of Supervisor Don Knabe	B	Los Angeles County
32	8/30/2010	Gateway Cities Administrative Committee	TAG/TWG	Gateway Cities
33	8/31/2010	Vernon/710 Coordination	AS	Gateway Cities, Los Angeles County
34	8/31/2010	LAUS TWG	TAG/TWG	Los Angeles and Orange County
35	9/1/2010	Bi-Weekly Meeting with OCTA & Anaheim	AS	Orange County
36	9/7/2010	SCAG	TAG/TWG	SCAG
37	9/7/2010	LAUS Tour	AS	Los Angeles County
38	9/8/2010	LAUS Parking & Traffic Meeting	AS	Los Angeles County
39	9/8/2010	Southern Approach to LAUS	AS	Los Angeles County
40	9/9/2010	OCTA Transit Committee	TAG/TWG	Orange County
41	9/13/2010	OCTA Board of Directors	STO	Orange County
42	9/15/2010	NRDC Briefing	AS	N/A
43	9/20/2010	Pico Rivera Briefing	AS	Pico Rivera
44	9/20/2010	Anaheim 5 Project Briefing	STO	Orange County
45	9/20/2010	Downtown LA Community Meeting	STO	Los Angeles City
46	9/22/2010	Vernon Briefing	AS	Vernon
47	9/22/2010	Montebello City Council Workshop	AS	Montebello
48	9/23/2010	OCTA-Fullerton Turnback Meeting	STO	Orange County
49	9/27/2010	LAUS TWG	TAG/ TWG	Los Angeles County
50	9/28/2010	Fullerton Briefing	AS	Fullerton

Table B-1 Outreach Tracking Matrix (continued)

No.	Date	Meeting	Category ¹⁷	Jurisdiction
51	9/28/2010	Santa Fe Springs Briefing	AS	Santa Fe Springs
52	9/28/2010	Pico Rivera City Council Briefing	B	Pico Rivera
53	9/29/2010	Buena Park Briefing	AS	Buena Park
54	9/29/2010	BNSF Meeting	STO	N/A
55	9/30/2010	Bellflower Rotary	GIO	Bellflower
56	10/4/2010	Montebello Briefing	AS	Montebello
57	10/4/2010	Vernon City Council Presentation	B	Vernon
58	10/6/2010	GCCOG Transportation Committee	TAG/TWG	Gateway Cities
59	10/6/2010	USACE LA River Crossing Meeting	TAG/TWG	Los Angeles county
60	10/7/2010	GCCOG TWG	TAG/TWG	Gateway Cities
61	10/7/2010	Commerce Briefing	AS	Commerce
62	10/12/2010	SoCal Railway Club	GIO	N/A
63	10/12/2010	BIA Union Contractors Council	GIO	N/A
64	10/12/2010	Downtown 2020 CCA Event	P	Los Angeles City
65	10/13/2010	Bi-Weekly Meeting with OCTA & Anaheim	AS	Orange County
66	10/13/2010	La Mirada Briefing	AS	La Mirada
67	10/14/2010	CMAA Owners Night	GIO	Los Angeles City
68	10/17/2010	Depot Day	P	N/A
69	10/18/2010	Montebello Maintenance Facility Charrette	AS	Montebello
70	10/18/2010	Fullerton Meeting	AS	Fullerton
71	10/18/2010	Anaheim 5 Project Briefing	STO	Orange County
72	10/25/2010	Fullerton Charrette	AS	Fullerton
73	10/26/2010	Little Tokyo Community Council	B	Los Angeles City
74	10/29/2010	Mobility 21 Conference	GIO, P	N/A
75	11/1/2010	Buena Park Station Charrette	AS	Buena Park
76	11/1/2010	Whittier Coordinating Council	B	Whittier
77	11/2/2010	OC City Managers Meeting	PWG	Orange County
78	11/2/2010	LA Ridership Forecast Follow-Up	AS	Los Angeles City

Table B-1 Outreach Tracking Matrix (continued)

No.	Date	Meeting	Category ¹⁷	Jurisdiction
79	11/2/2010	Gold Line Relocation Coordination	TAG/TWG	Los Angeles County
80	11/4/2010	Grade Separation Charrette	AS	Santa Fe Springs / La Mirada
81	11/4/2010	GCCOG TWG	TAG/TWG	Gateway Cities
82	11/9/2010	Santa Fe Springs Council Briefing	B	Santa Fe Springs
83	11/9/2010	Norwalk/Santa Fe Springs Station Charrette	AS	Santa Fe Springs / Norwalk
84	11/10/2010	Bi-Weekly Meeting with OCTA & Anaheim	AS	Orange County
85	11/10/2010	Little Tokyo Transit Committee	TAG/TWG	Los Angeles City
86	11/15/2010	Anaheim 5 Project Briefing	STO	Orange County
87	11/16/2010	Commerce City Council	B	Commerce
88	11/17/2010	LADOT DASH Refueling Site Meeting	AS	Los Angeles County
89	11/17/2010	Nutrilite Coordination Meeting	STO	Buena Park
90	11/18/2010	Montebello Open House	AS	Montebello
91	11/19/2010	OC Moves	P	Orange County
92	11/30/2010	Little Tokyo Coordination	STO	Los Angeles City
93	12/2/2010	Corridor Tour w/ office of Congresswoman Roybal-Allard	B	Federal
94	12/3/2010	Buena Park Traffic Meeting	AS	Buena Park
95	12/7/2010	La Mirada Council Briefing	B	La Mirada
96	12/9/2010	I-5 EIR Technical Briefing	STO	State
97	12/14/2010	Montebello Maintenance Facility Discussion	AS	Montebello
98	12/14/2010	Presentation to Amelia Mayberry Park Senior Center	GIO	Gateway Cities
99	12/16/2010	Fukui Mortuary	STO	Los Angeles City
100	12/20/2010	Anaheim 5 Project Briefing	STO	Orange County
101	1/5/2011	Bi-Weekly Meeting with OCTA & Anaheim	AS	Orange County
102	1/11/2011	LADOT Coordination	AS	Los Angeles County
103	1/12/2011	Central City East Association	TAG/ TWG	Los Angeles City
104	1/12/2011	ARTIC Discussion	AS	Orange County
105	1/14/2011	Japanese High-Speed Rail Seminar	STO	Los Angeles City

Table B-1 Outreach Tracking Matrix (continued)

No.	Date	Meeting	Category ¹⁷	Jurisdiction
106	1/20/2011	So-Cal Chapter of Association of Commuter Transportation	STO	N/A
107	1/24/2011	Gateway Cities Administrative Committee	TAG/TWG	Gateway Cities
108	1/27/2011	Anaheim 5 Project Briefing	STO	Orange County
109	2/1/2011	Meeting with Mike Kodama	B	N/A
110	2/1/2011	Downtown LA Neighborhood Council Transit Forum	GIO	Los Angeles City
111	2/2/2011	Bi-Weekly Meeting with OCTA & Anaheim	AS	Orange County
112	2/16/2011	Commerce/Vernon Technical Briefing	AS	Commerce / Vernon
113	2/22/2011	Briefing with Matt Toledo	B	N/A
114	2/24/2011	LA Environmental Groups	STO	Los Angeles City
115	2/24/2011	Meeting with Metro	STO	Los Angeles County
116	2/28/2011	Gateway Cities Preview	STO	Gateway Cities
117	3/1/2011	OCTA Preview	STO	Orange County
118	3/1/2011	Briefing with Office of Roybal-Allard	B	Federal
119	3/10/2011	Meeting re: LAUS Traffic and Parking	AS	Los Angeles County
120	3/10/2011	OCTA Transit Committee	TAG/TWG	Orange County
121	3/16/2011	Bi-Weekly Meeting with OCTA & Anaheim	AS	Orange County
122	3/16/2011	Meeting re: LAUS Traffic and Parking	AS	Los Angeles County
123	3/21/2010	Anaheim 5 Project Briefing	STO	Orange County
124	3/21/2011	OCTA Board Member Peter Herzog	B	Orange County
125	3/23/2011	LAUS Parking & Traffic Follow-up Meeting	AS	Los Angeles County
126	3/25/2011	OCTA Board Member Don Bankhead	B	Orange County
127	3/28/2011	Briefing with Thaddeus McCormack, SFS City Manager	AS	Santa Fe Springs
128	3/28/2011	OCTA Board of Directors	B	Orange County
129	4/5/2011	Briefing with Joe Felz, Acting Fullerton City Manager	AS	Fullerton
130	4/6/2011	Montebello Business Expo	GIO	Montebello
131	4/7/2011	OC City Managers Meeting	PWG	Orange County
132	4/12/2011	Presentation to American Military Engineers	GIO	N/A
133	4/18/2011	Anaheim 5 Project Briefing	STO	Orange County

Table B-1 Outreach Tracking Matrix (continued)

No.	Date	Meeting	Category ¹⁷	Jurisdiction
134	4/20/2011	Monthly Meeting with OCTA & Anaheim	AS	Orange County
135	4/26/2011	LAUS Parking Charrette	AS	Los Angeles County
136	5/7/2011	National Train Day	P	Los Angeles County
137	5/8/2011	Fiesta Broadway	P	Los Angeles City
138	5/12/2011	WTS Luncheon re: LOSSAN Corridor	GIO	Orange County
139	5/12/2011	Taste of Anaheim	P	Anaheim
140	5/16/2011	Anaheim 5 Project Briefing	STO	Orange County
141	5/17/2011	Metro Outreach Coordination	AS	Los Angeles County
142	5/19/2011	Los Angeles Neighborhood Initiative Community Forum	GIO	Los Angeles City
143	5/26/2011	Vernon Technical Coordination	AS	Vernon
144	6/1/2011	LA-SD Downtown Open House	PIM	Los Angeles City
145	6/2/2011	LA-SD Montebello Open House	PIM	Montebello
146	5/1/2010, 5/2/2010	Railroad Days	P	Los Angeles City
147	6/9/2011	LOSSAN TAC	TAC/TWG	LOSSAN Corridor
148	6/20/2011	Anaheim 5 Project Briefing	STO	Orange County
149	6/20/2011	LA-SD Boyle Heights Open House	PIM	Los Angeles City
150	6/24/2011	Coordination Meeting with HDR, Metrolink, and Metro	TAG / TWG	Los Angeles County
151	6/28/2011	Metro Outreach Coordination	AS	Los Angeles County
152	6/28/2011	LA-A Planning Meeting with D Sepulveda	AS	Los Angeles County
153	7/1/2011	LAUS Planning Meeting with Metro	AS	Los Angeles County
154	7/9/11, 7/10/11	Little Tokyo Obon Festival	P	Los Angeles City
155	7/12/2011	LA Chamber High-Speed Rail Committee	B	Los Angeles County
156	7/18/2011	Anaheim 5 Project Briefing	STO	Orange County
157	7/19/2011	Vernon City Council	AS	Vernon
158	7/20/2011	Buena Park Update Briefing	AS	Buena Park
159	7/21/2011	LA's Largest Mixer	P	Los Angeles City
160	7/23/2011	BloomFEST LA	P	Los Angeles City
161	7/27/2011	LOSSAN Board of Directors	B	LOSSAN Corridor

Table B-1 Outreach Tracking Matrix (continued)

No.	Date	Meeting	Category ¹⁷	Jurisdiction
162	7/29/2011	Briefing with Tim Buresh	AS	N/A
163	8/3/2011	Briefing with the office of Councilwoman Perry	B	Los Angeles City
164	8/4/2011	Briefing with Office of Speaker Perez	B	State
165	8/5/2011	Regional Connector Coordination	TAG / TWG	Los Angeles County
166	8/11/2011	Santa Fe Springs Briefing	AS	Santa Fe Springs
167	8/13/11, 8/14/11	Little Tokyo Nisei Week	P	Los Angeles City
168	8/15/2011	Anaheim 5 Project Briefing	STO	Orange County
169	8/17/2011	Office of Assembly member Tony Mendoza Briefing	B	State
170	8/19/2011	Briefing with the office of State Senator Bob Huff	B	State
171	8/22/2011	GCCOG Administrative Committee	TAG/TWG	Gateway Cities
172	8/22/2011	Anaheim Council Briefing- office of Councilwoman Lorrie Galloway	B	Anaheim
173	8/22/2011	Anaheim Council Briefing- office of Mayor Tom Tait	B	Anaheim
174	8/22/2011	Anaheim Council Briefing- office of Mayor Pro Tem Harry Sidhu	B	Anaheim
175	8/22/2011	Anaheim Council Briefing- office of Councilmember Gail Eastman	B	Anaheim
176	8/26/2011	Office of Congresswoman Loretta Sanchez	B	Federal
177	9/5/2011	LA/Long Beach Harbor Labor Day Parade/Rally	P	Long Beach
178	9/6/2011	Mobility 21 Transportation Summit	GIO	N/A
179	9/7/2011	Office of Senator Tom Harman Briefing	B	State
180	9/10/2011	East LA Farmers Market	P	Los Angeles City
181	9/12/2011	Los Angeles River Artists and Business Association (LARABA)	GIO	Los Angeles City
182	9/15/2011	La Mirada Briefing	AS	La Mirada
183	9/15/2011	Santa Fe Springs Business Expo	P	Santa Fe Springs
184	9/15/2011	Buena Park Briefing	AS	Buena Park
185	9/19/2011	Buena Park Station Charrette	AS	Buena Park
186	9/19/2011	Anaheim 5 Project Briefing	STO	Orange County
187	9/21/2011	Vernon Briefing	AS	Vernon
188	9/22/2011	GCCOG Public Works Committee	TAG / TWG	Gateway Cities
189	9/28/2011	Office of Assemblymember Allan Mansoor	B	State

Table B-1 Outreach Tracking Matrix (continued)

No.	Date	Meeting	Category ¹⁷	Jurisdiction
190	9/29/2011	Santa Fe Springs Chamber Transportation Summit	TAG / TWG	Santa Fe Springs
191	9/10/2011	Fullerton Station Charrette	AS	Fullerton
192	10/5/2011	Los Angeles Neighborhood Initiative (LANI)	STO	Los Angeles City
193	10/5/2011	Commerce Briefing	AS	Commerce
194	10/8/2011	East LA Farmers Market	P	Los Angeles City
195	10/10/2011	Anaheim Dispersed Parking Discussion	AS	Anaheim
196	10/21/2011	Norwalk/Santa Fe Springs Station Charrette	AS	Norwalk / Santa Fe Springs
197	10/24/2011	Metro Outreach Coordination	AS	Los Angeles County
198	10/17/2011	LAUS Planning Meeting with Metro	AS	Los Angeles County
199	11/2/2011	Key Stakeholder Business Plan	STO	N/A
200	11/3/2011	LOSSAN TAC Meeting	TAG/TWG	LOSSAN Corridor
201	11/5/2011	Train Riders' Association of California (TRAC) Conference	GIO	N/A
202	11/7/2011	OCTA Board of Directors	B	Orange County
203	11/14/2011	OCTA Board of Directors	B	Orange County
204	11/14/2011	Metro Outreach Coordination	AS	Los Angeles County
205	11/17/2011	OCTA Legislative Committee	PWG	Orange County
206	11/19/2011	Metro Planning Meeting	AS	Los Angeles County
207	11/21/2011	Briefing with office of Assemblymember Chris Norby	B	State
208	11/21/2011	Anaheim 5 Project Briefing	STO	Orange County
209	11/28/2011	OCTA Board of Directors	B	Orange County
210	11/29/2011	LAUS Discussion with Metro Planning Staff	AS	Los Angeles County
211	11/30/2011	SCAG Natural Resources & 2012 RTP Workshop	PIM	SCAG
212	11/30/2011	LA Chamber High-Speed Rail Committee	B	Los Angeles County
213	11/30/2011	Construction Management Association of America (CMMA) Transportation Night	GIO	N/A
214	12/1/2011	SCAG Transportation, Sustainability, and Economic Summit	TAG / TWG	SCAG
215	12/1/2011	OCTA Transit Committee	STO	Orange County
216	12/2/2011	OCTA Finance and Administration Committee	STO	Orange County

Table B-1 Outreach Tracking Matrix (continued)

No.	Date	Meeting	Category ¹⁷	Jurisdiction
217	12/7/2011	Fullerton Station Charrette Follow-Up	AS	Fullerton
218	12/10/11-12/11/11	Amtrak 40th Anniversary Event	P	N/A
219	12/12/2011	OCTA Board of Directors	B	Orange County
220	12/14/2011	SAME Presentation	P	Orange County
221	12/15/2011	High-Speed Rail/Metro Southern California Section Review	TAG / TWG	Los Angeles County
222	12/15/2011	Norwalk/Santa Fe Springs Station Charrette Follow-Up	AS	Norwalk / Santa Fe Springs
223	12/19/2011	Anaheim 5 Project Briefing	STO	Orange County
224	1/7-8/2012	Great Train Expo 2012	P	N/A
225	1/12/2012	CHSRA Board Meeting	P	State
226	1/17/2012	City of Los Angeles Briefing	AS	Los Angeles County
227	1/17/2012	Anaheim 5 Project Briefing	STO	Orange County
228	1/23/2012	OCTA Board Meeting	B	Orange County
229	1/24/2012	Metro Briefing	AS	Los Angeles County
230	1/30/2012	Office of Supervisor Knabe Briefing	B	Los Angeles County
231	2/2/2012	SCAG Regional Council Meeting	P	SCAG
232	2/2/2012	CMAA Owners Night	GIO	N/A
233	2/6/2012	OCTA Executive Committee	STO	Orange County
234	2/9/2012	OCTA Transit Committee	STO	Orange County
235	2/11/2012	Downtown Anaheim Art Crawl Experience	P	Anaheim
236	2/13/2012	OCTA Board Meeting	B	Orange County
237	2/14/2012	Railway Association of Southern California	GIO	N/A
238	2/15/2012	Montebello Rotary Club	GIO	Montebello
239	2/21/2012	Anaheim 5 Project Briefing	STO	Orange County
240	2/23/2012	LA River Update	P	Los Angeles City
241	2/27/2012	OCTA Board Meeting	B	Orange County
242	2/29/2012	ARTIC Meeting with City of Anaheim	AS	Orange County
243	3/5/2012	OCTA Executive Committee	STO	Orange County

Table B-1 Outreach Tracking Matrix (continued)

No.	Date	Meeting	Category ¹⁷	Jurisdiction
244	3/6/2012	Anaheim/OC Visitor & Convention Bureau Briefing	P	Orange County
245	3/7/2012	OC's Largest Mixer	P	Orange County
246	3/10/2012	Southern California Transit Advocates Briefing	GIO	N/A
247	3/12/2012	OCTA Board Meeting	B	Orange County
248	3/15/2012	Central City East Association	GIO	Los Angeles City
249	3/19/2012	Anaheim 5 Project Briefing	STO	Orange County
250	3/20/2012	Orange County Economic Development Forum	GIO	Orange County
251	3/26/2012	OCTA Board Meeting	B	Orange County
252	4/2/2012	OCTA Regional Planning and Highways Committee	STO	Orange County
253	4/5/2012	Montebello Business Expo	P	Montebello
254	4/9/2012	OCTA Board Meeting	B	Orange County
255	4/11/2012	Southern California Blended Approach	PIM	N/A
256	4/12/2012	OCTA Transit Committee	STO	Orange County
257	4/16/2012	Southern California Blended Approach Review Meeting	PIM	N/A
258	4/17/2012	Los Angeles Trade Tech College Briefing	GIO	Los Angeles City
259	4/23/2012	OCTA Board Meeting	B	Orange County
260	4/29/2013	Fiesta Broadway	P	Los Angeles City
261	5/3/2012	Downtown Anaheim Certified Farmers Market	P	Anaheim
262	5/5-6/2012	Fullerton Railroad Days	P	Fullerton
263	5/9/2012	Homeboy Industries	P	Los Angeles City
264	5/10/2012	OCTA Transit Committee	STO	Orange County
265	5/10/2012	Taste of Anaheim	P	Anaheim
266	5/12/2012	National Train Day	P	Los Angeles City
267	5/14/2012	OCTA Board Meeting	B	Orange County
268	5/15/2012	California Disabled Veteran Business Alliance	GIO	N/A
269	5/15/2012	City of Los Angeles Briefing	AS	Los Angeles City
270	5/17/2012	Los Angeles Neighborhood Initiative (LANI) Community Forum	P	Los Angeles City
271	5/24/2012	OCTA Transit Committee	STO	Orange County

Table B-1 Outreach Tracking Matrix (continued)

No.	Date	Meeting	Category ¹⁷	Jurisdiction
272	5/25/2012	OCTA Board Meeting	B	Orange County
273	5/30/2012	Office of Councilwoman Murray	B	Anaheim
274	6/2/2012	Small Business "Prep for Primes" Forum Activity Center	P	N/A
275	6/3/2012	Lummis Day Festival	P	Los Angeles City
276	6/7/2012	ACCOC 2012 City Infrastructure Summit	P	N/A
277	7/9/2012	OCTA Board Meeting	B	Orange County
278	7/11/2012	Meeting with Richard Powers and Tom Robinson	AS	N/A
279	7/12/2012	Downtown Anaheim Certified Farmers Market	P	Anaheim
280	7/18/2012	WTS-OC Luncheon with Valerie Martinez	GIO	Orange County
281	7/19/2012	Meeting on I-710 with Jerry Wood	STO	N/A
282	7/19/2012	Construction Management Association of America (CMMA) Southern California Dinner	GIO	N/A
283	7/19/2012	LA's Largest Mixer	P	Los Angeles City
284	7/21/2012	BloomFest LA	P	Los Angeles City
285	8/1/2012	City of LA/METRO High-Speed Rail Briefing	AS	Los Angeles County
286	8/3/2012	Downtown Anaheim Certified Farmers Market	P	Anaheim
287	8/5/2012	Nike 3 on 3 Tournament	P	Los Angeles City
288	8/8/2012	OCTA LAA Section Meeting	AS	Orange County
289	8/9/2012	OCTA Transit Committee	STO	Orange County
290	8/9/2012	City of Fullerton Meeting with Joe Felz	AS	Fullerton
291	8/13/2012	OCTA Board Meeting	B	Orange County
292	8/16/2012	METRO and Union Station Master Plan Team Meeting	AS	Los Angeles County
293	8/16/2012	Downtown Los Angeles Neighborhood Council Transit Forum	GIO	Los Angeles City
294	9/4/2012	GCCOG Meeting	STO	Gateway Cities
295	9/5/2012	GCCOG Public Works Directors Workshop	TAG / TWG	Gateway Cities
296	9/6/2012	LOSSAN TAC Meeting	TAG / TWG	LOSSAN Corridor
297	9/13/2012	OCTA Transit Committee	STO	Orange County
298	9/13/2012	Business Development Association Meeting	GIO	N/A

Table B-1 Outreach Tracking Matrix (continued)

No.	Date	Meeting	Category ¹⁷	Jurisdiction
299	9/20/2012	State College Grade Separation meeting	AS	Anaheim
300	9/27/2012	Orange County City Managers Meetings	PWG	Orange County
301	9/28/2012	Mobility 21 SoCal Summit Activity Center	PIM	N/A
302	10/5/2012	OCTA Board of Directors	B	Orange County
303	10/17/2012	Sixth St Bridge meeting with HNTB & LA City	TAG / TWG	Los Angeles City
304	10/22/2012	City of Vernon Meeting	AS	Vernon
305	10/23/2012	Anaheim City Council Presentation	B	Anaheim
306	10/29/2012	Meeting with City Manager Jim Vanderpool	AS	Buena Park
307	10/31/2012	City of Anaheim Briefing	AS	Anaheim
308	11/8/2012	UPRR Presentation	STO	N/A
309	11/6/2012	USACE Meeting	STO	Los Angeles City
310	11/27/2012	Fullerton City Meeting with City Engineer, Planner & Manager	AS	Fullerton
311	12/10/2012	Anaheim State College Follow Up	AS	Anaheim
312	1/9/2013	GCCOG TAC Meeting	TAG/TWG	Gateway Cities
313	1/16/2013	Anaheim Grade Crossings Meeting	AS	Anaheim
314	1/25/2013	LAUS Meeting	AS	Los Angeles County
315	2/7/2013	Buena Park Meeting with City Manager and Engineer	AS	Buena Park
316	2/13/2013	GCCOG TAC Meeting	TAG / TWG	Gateway Cities
317	4/3/2013	METRO Master Plan Meeting about LAUS	AS	Los Angeles County
318	4/15/2013	Fullerton City Manager Meeting	AS	Fullerton
319	5/2/2013	LA Union State Master Plan Community Worship	PIM	Los Angeles County
320	5/9/2013	Briefing with the office of Assemblywoman Sharon Quirk-Silva	B	State
321	5/9/2013	Briefing with the office of Congresswoman Loretta Sanchez	B	State
322	5/9/2013	Senator Bob Huff's Open house	B	State
323	5/15/2013	Small Business Workshop	PIM	N/A
324	5/15/2013	Fullerton City Manager Meeting	AS	Fullerton
325	5/15/2013	Jerry Wood Meeting	AS	N/A
326	5/28/2013	Meeting with Charlotte Ruggeri	B	N/A

Table B-1 Outreach Tracking Matrix (continued)

No.	Date	Meeting	Category ¹⁷	Jurisdiction
327	5/29/2013	Meeting with the office of Ian Calderon	B	State
328	5/30/2013	ACCOC 4th Annual Infrastructure Summit	PIM	N/A
329	5/30/2013	Meeting with office of Diane DuBois, incoming LA METRO Board Chair	B	Los Angeles County
330	6/6/2013	Meeting with Terry Rodriguez and City of Bell	AS	Bell
331	6/12/2013	Meeting with Office of Senator Bob Huff	B	State
332	6/19/2013	Meeting with Office of Congresswoman Lucille Roybal-Allard	B	Los Angeles County
333	7/2/2013	Pico Rivera City Manager Meeting	AS	Pico Rivera
334	7/10/2013	Norwalk & Santa Fe Springs Alignment Meeting	AS	Norwalk / Santa Fe Springs
335	7/16/2013	Briefing with the Office of Senator Ron Calderon	B	State
336	8/20/2013	La Mirada City Meeting	AS	La Mirada
337	9/3/2013	Commerce Meeting	AS	Commerce
338	9/18/2013	METRO Board Workshop on LAUS Master Plan	TAG / TWG	Los Angeles County
339	9/26/2013	Vernon Meeting with Kevin Wilson	AS	Vernon
340	9/27/2013	Briefing with the Office of Senator Ricardo Lara	B	State
341	10/14/2013	CHSRA Board Meeting	P	State
342	10/15/2013	City of Anaheim Briefing	AS	Anaheim
343	10/22/2013	Montebello Meeting	AS	Montebello
344	10/24/2013	METRO Board Meeting	P	Los Angeles County
345	11/1/2013	LOSSAN Technical Advisory Committee	TAG / TWG	LOSSAN Corridor
346	11/12/2013	OCBC Infrastructure Committee	STO	Orange County
347	11/12/2013	Anaheim Briefing with Natalie Meeks	AS	Anaheim
348	11/26/2013	Update Call with Key Stakeholders	AS	Project Corridor
349	12/5/2013	LOSSAN TAC Meeting	TAG / TWG	LOSSAN Corridor
340	12/11/2013	ACEC OC December Luncheon	GIO	Orange County
341	12/17/2013	Briefing with the office of Senator Lou Correa	B	State
342	12/18/2013	City of Vernon Meeting	AS	Vernon
343	12/19/2013	Anaheim Grade Crossings Meeting	AS	Anaheim

Table B-1 Outreach Tracking Matrix (continued)

No.	Date	Meeting	Category ¹⁷	Jurisdiction
344	1/9/2014	LOSSAN TAC Meeting	TAG / TWG	LOSSAN Corridor
345	1/15/2014	Anaheim ARC Coordination	AS	Anaheim
346	1/23/2014	Follow Up Meeting with Montebello - PW Director Danilo Batson	AS	Montebello
347	1/9/2014	LOSSAN TAC Meeting	TWG	LOSSAN Corridor
348	1/15/2014	Anaheim ARC Coordination	AS	Anaheim
349	1/20/2014	Briefing with Buena Park, office of Art Brown	B	Buena Park
350	1/23/2014	Follow Up Meeting with Montebello - PW Director Danilo Batson	AS	Montebello
351	1/28/2014	Key Stakeholder Conference Call	STO	Project Corridor
352	2/3/2014	City of Anaheim Conference Call	AS	Anaheim
353	2/6/2014	Office of Congresswoman Lucille Roybal-Allard	B	Los Angeles County
354	2/7/2014	METRO Monthly Outreach Call	AS	Los Angeles County
355	2/12/2014	METRO MOU Meeting	AS	Los Angeles County
356	3/12/2014	Briefing with Office of Congresswoman Roybal-Allard	B	Los Angeles County
357	3/13/2014	High-Speed Rail / Anaheim MOU Meeting	AS	Anaheim
358	3/20/2014	Briefing with the Office of Assemblyman Tom Daly	B	Orange County
359	3/20/2014	Meeting with LOSSAN JPA Staff	AS	LOSSAN Corridor
360	3/20/2014	Meeting with Anaheim Convention and Visitors Bureau	STO	Anaheim
361	3/27/2014	BNSF Coordination Meeting	TAG	LOSSAN Corridor
362	4/2/2014	LOSSAN TAC Meeting	TWG	LOSSAN Corridor
363	4/28/2014	LOSSAN Board of Directors	PWG	LOSSAN Corridor
364	5/6/2014	Office of Congressman Ed Royce	B	Orange County
365	5/30/2014	Section tour with EMT / PMT	TAG	LOSSAN Corridor
366	6/4/2014	City of Commerce Meeting	AS	Commerce
367	6/30/2014	Office of Supervisor Gloria Molina	B	Los Angeles County
368	7/15/2014	City of Montebello Meeting	AS	Montebello
369	7/25/2014	Office of Councilman Jose Huizar	B	Montebello
370	8/27/2014	Briefing with Little Tokyo Community Council	STO	Little Tokyo
371	9/4/2014	LOSSAN TAC	TAG/TWG	LOSSAN Corridor

Table B-1 Outreach Tracking Matrix (continued)

No.	Date	Meeting	Category ¹⁷	Jurisdiction
371	9/18/2014	City of Bell Meeting	AS	Bell
372	9/23/2014	City of Commerce Meeting	AS	Commerce
372	9/30/2014	LA-A Anaheim Grade Crossing Meeting	AS	Anaheim
374	10/1/2014	GCCOG Board of Directors Meeting	B	Gateway Cities
375	10/16/2014	Office of Assemblywoman Cristina Garcia	B	Los Angeles County
376	10/20/2014	LOSSAN JPA Board Meeting	B	LOSSAN Corridor
377	10/23/2014	OCTA Small Business Expo	STO	Orange County
378	12/8/2014	ARTIC VIP Grand Opening	B	Anaheim
379	12/13/2014	ARTIC Grand Opening	P	Anaheim
380	12/17/2014	OC City Managers	AS	Orange County
381	12/29/2014	Kekoa Anderson, GCCOG	AS	Los Angeles County
382	1/8/2015	LOSSAN JPA TAC	AS	LOSSAN Corridor
383	1/29/2015	CMAA Southern CA Owners' Night	STO	N/A
384	2/18/2015	LOSSAN JPA Board Meeting	B	LOSSAN Corridor
385	2/18/2015	WTS-OC February Luncheon	STO	Orange County
386	2/18/2015	Metro Monthly Outreach Call	AS	Los Angeles County
387	2/19/2015	Anaheim/OC Visitor and Convention Bureau Board Meeting	STO	Orange County
388	2/20/2015	Meeting with City of Buena Park	AS	Buena Park
389	2/20/2015	Briefing with Office of Congresswoman Linda Sanchez	B	Federal
390	2/25/2015	Meeting with City of Fullerton	AS	Fullerton
391	3/18/2015	GCCOG Staff	AS	Los Angeles County
392	4/2/2015	LOSSAN JPA TAC	AS	LOSSAN Corridor
393	4/15/2015	Metro Monthly Outreach Call	AS	Los Angeles County
394	4/16/2015	Briefing with Pico Rivera	AS	Pico Rivera
395	4/16/2015	Briefing with Office of Congresswoman Roybal Allard	EO	Federal
396	4/16/2015	Briefing with Office of Assemblywoman Young Kim	EO	State
397	4/21/2015	Cal State Fullerton Sustainability Fair	P	Orange County
398	4/24/2015	Assemblyman Daly's Labor Meeting	B/STO	State

Table B-1 Outreach Tracking Matrix (continued)

No.	Date	Meeting	Category ¹⁷	Jurisdiction
399	4/28/2015	Briefing with Office of Congresswoman Loretta Sanchez	EO	Federal
400	4/29/2015	Briefing with Office of Senator Janet Nguyen	EO	State
401	5/15/2015	International Chinese Transportation Professional Association Conference	GIO	N/A
402	5/20/2015	Metro/High-Speed Rail Monthly Outreach Call	AS	Los Angeles County
403	5/26/2015	City of Fullerton, City Manager briefing	AS	Fullerton
404	5/27/2015	American Council of Engineering Companies Orange County Luncheon	GIO	Orange County
405	6/2/2015	WTS, LA Chapter, Rail Panel	GIO	Los Angeles County
406	6/17/2015	Metro/High-Speed Rail Monthly Outreach Call	AS	Los Angeles County
407	6/25/2015	Orange County (Anaheim, Fullerton, Buena Park) City Managers Briefing	AS	Orange County
408	6/26/2015	Norwalk/Santa Fe Springs Update Meeting	AS	Norwalk/Santa Fe Springs
409	6/28/2015	Orange County Citrus Festival	GIO	Orange County
410	7/6/2015	City of Montebello	B / AS	Montebello
411	7/14/2015	OCBC – Infrastructure Committee	STO	Orange County
412	7/15/2015	Metro/High-Speed Rail Monthly Outreach Call	AS	Los Angeles County
413	7/21/2015	Office of Senator Ricardo Lara – Briefing	AS	State
414	7/23/2015	Southern California Leadership Network - Panel discussion	GIO	N/A
415	7/25/2015, 7/26/2015	20th Annual Central Avenue Jazz Festival	GIO	N/A
416	7/30/2015	Downtown Anaheim Farmer's Market	GIO	Anaheim
417	8/5/2015	Briefing for the office of Sup. Knabe	B	Los Angeles County
418	8/6/2015	Briefing for the office of Sup. Solis	B	Los Angeles County
419	8/6/2015	La Mirada Concerts in the Park	P	La Mirada
420	8/6/2015	Montebello Concerts in the Park	P	Montebello
421	8/7/2015	ARTIC Transit Center	P	Anaheim
422	8/9/2015	OC Fun Run	P	Orange County
423	8/13/2015	Commerce Farmers Market Information Table	P	Commerce
424	8/14/2015	Briefing for the office of Asm. Calderon	B	State

Table B-1 Outreach Tracking Matrix (continued)

No.	Date	Meeting	Category ¹⁷	Jurisdiction
425	8/14/2015	Briefing for the office of Asm. Rendon	B	State
426	8/19/2015	Building Industry Association (BIA) OC Underwriters	GIO	Orange County
427	8/23/2015	Councilmember Gilbert Cedillos' Latin Jazz Festival	P	Los Angeles City
428	8/24/2015	Cal State Fullerton Week of Welcome	P	Orange County
429	8/24/2015	Metro's Active Transportation Strategic Plan Workshop	AS	Los Angeles County
430	8/25/2015	City of Vernon – Staff Briefing	AS	Vernon
431	8/26/2015	Metro/CHSRA Monthly Outreach Call	AS	Los Angeles County
432	8/28/2015	Mobility 21 Conference – Information Booth and Panel	STO	N/A
433	9/2/2015	City of Commerce – City Manager Brief	AS	Commerce
434	9/3/2015	City of Montebello – City Manager Briefing	AS	Montebello
435	9/3/2015	City of Bell – City Manager Briefing	AS	Bell
436	9/4/2015	OC Corridor Cities Policy Meeting	B/AS	Orange County
437	9/13/2015	EarthFest Los Angeles	GIO	Los Angeles County
438	9/16/2015	Metro/High-Speed Rail Monthly Outreach Call	AS	Los Angeles County
439	9/17/2015	Senator Tony Mendoza – Staff briefing	AS	State
440	9/17/2015	Norwalk/Santa Fe Springs – City Managers meeting	AS	Norwalk/Santa Fe Springs
441	9/23/2015	Montebello City Council – Presentation	B	Montebello
442	10/5/2015	Legislative Briefing	B	Pico Rivera
443	10/14/2015	Pico Rivera City Council's Transportation Ad Hoc Committee	B	Pico Rivera
444	10/15/2015	Community Open House Meeting – Anaheim	P	Anaheim
445	10/17/2015	Community Open House Meeting – Pico Rivera (Spanish & English Meeting)	P	Pico Rivera
446	10/21/2015	Coordination Meeting with the cities of Norwalk and Santa Fe Springs	AS	Norwalk/Santa Fe Springs
447	10/21/2015	Community Open House Meeting – Norwalk	P	Norwalk
448	10/21/2015	City of Los Angeles Mayor Garcetti's Office	AS	Los Angeles
449	10/21/2015	Metro/High-Speed Rail Monthly Outreach Call	AS	Los Angeles County
450	10/26/2015	Community Open House Meeting – Fullerton (Live Webcast)	P	Fullerton
451	10/28/2015	Community Open House Meeting – Buena Park	P	Buena Park

Table B-1 Outreach Tracking Matrix (continued)

No.	Date	Meeting	Category ¹⁷	Jurisdiction
452	11/3/2015	Path to Positive: Los Angeles Climate Day	GIO	N/A
453	11/6/2015	Norwalk/Santa Fe Springs Reimbursable Grant Agreement Conf. Call	AS	Norwalk/Santa Fe Springs
454	11/6/2015	USACE/EPA Briefing	AS	Federal
455	11/9/2015	City of Vernon Staff	AS	Vernon
456	11/10/2015	City of Norwalk Staff	AS	Norwalk
457	11/10/2015	Congressman Becerra Staff	AS	Federal
458	11/10/2015	Community Open House Meeting – Downtown Los Angeles	P	Los Angeles
459	11/19/2015	USACE Briefing	AS	Federal

¹⁹ P: Public; TAG/TWG: Technical Assessment/Working Group; PWG: Policy Working Group; GIO: General Interested Organization; STO: Stakeholder Organization; B: Briefing; AS: Agency Staff; ML Media

Appendix C

Program History

Table C-1 2005 Statewide Program EIR/EIS Los Angeles to Anaheim Section

Alternative Alignments / Stations	Statewide Program EIR/EIS Decision		Reasons for Elimination						
	Carried Forward	Eliminated from Further Consideration	Construction	Incompatibility	Right-of-Way	Connectivity/ Accessibility	Revenue/ Ridership	Alignment Eliminated*	Environment
Los Angeles to San Diego Passenger Rail Corridor (LOSSAN Corridor) alignment	X								
Union Pacific Santa Ana Branch Line alignment		X						P	Infrastructure requirements
Station Location: LAUS	X								
Station Location: Norwalk/Santa Fe Springs (East of I-5)	X								
Station Location: Norwalk (west of I-5)		X						P	
Station Location: Anaheim	X								
Station Location: Irvine**		X						P	

Source: 2005 Final Statewide Program EIR/EIS for the Proposed California High-Speed Train System, California High-Speed Rail (Authority 2005).

Notes:

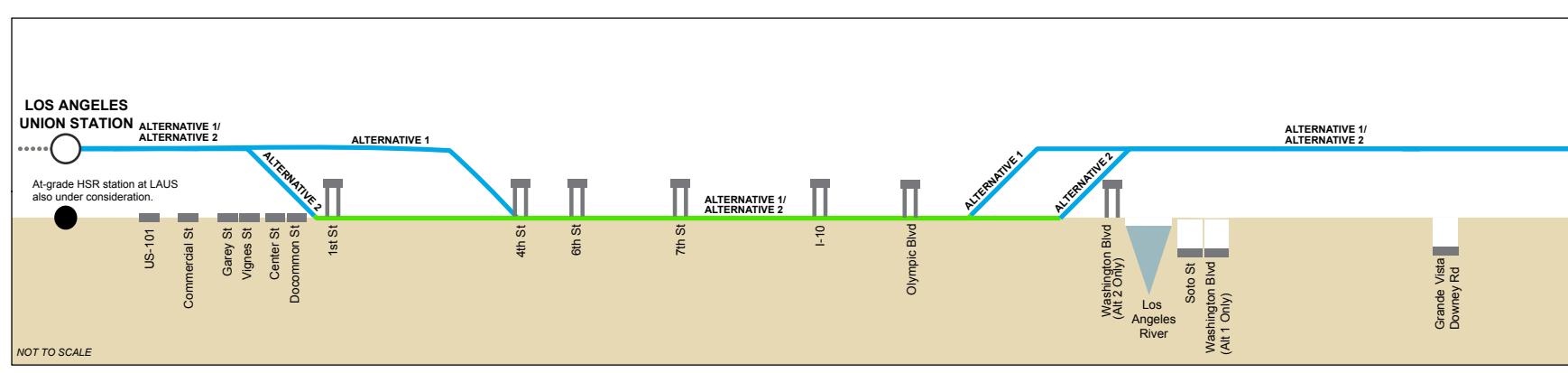
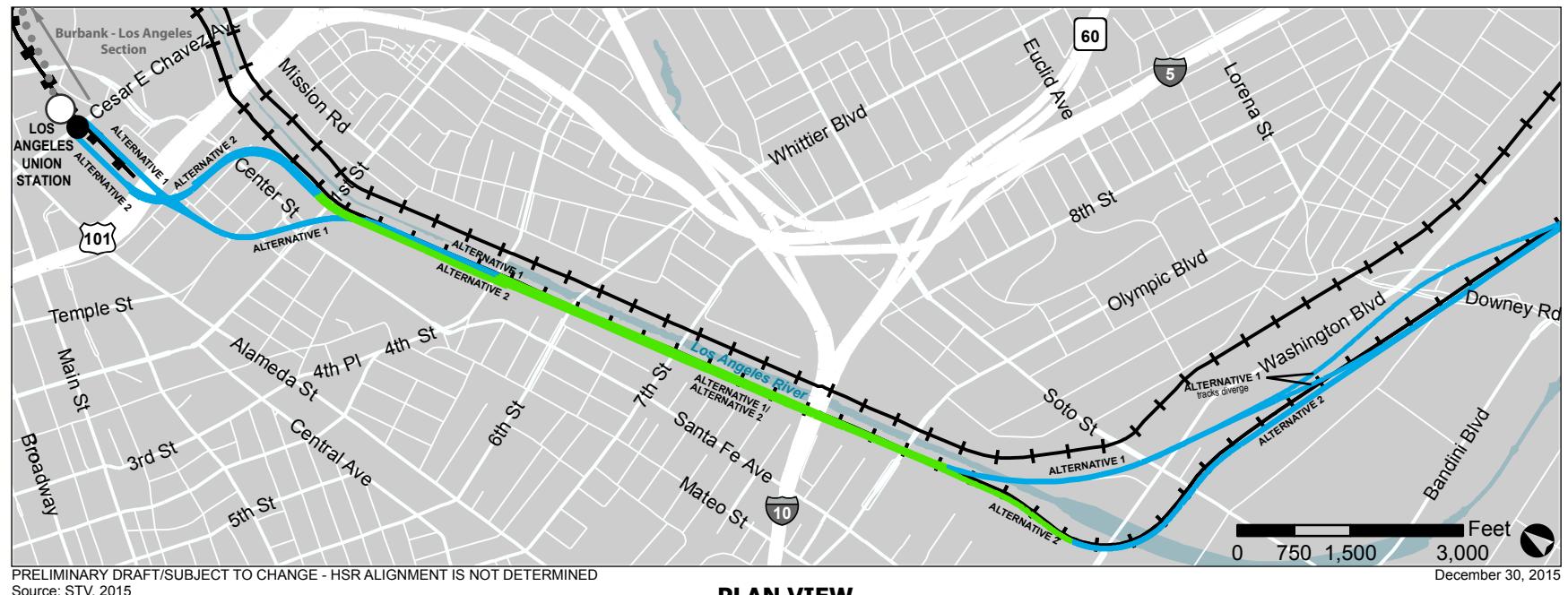
Reason: Primary (P) and secondary (S) reasons for elimination.

*Alignment Eliminated column only applies to station location options. If an alignment is eliminated, a specific station location may no longer be necessary or possible.

** The Los Angeles to Orange County project-level environmental document would only consider high-speed rail service between LAUS and Anaheim. High-speed rail service beyond Anaheim to Irvine may be considered separately in the future.

Appendix D

Plan and Profile Maps



PROFILE VIEW

The legend identifies four types of rail lines: 'Existing Track' (represented by a black line with vertical tick marks), 'Proposed HSR Station' (represented by a black circle), 'Metrolink Station' (represented by a black dot), and three levels of new high-speed rail: 'Below-Grade' (purple line), 'Surface' (green line), and 'Elevated' (blue line).

Figure 1

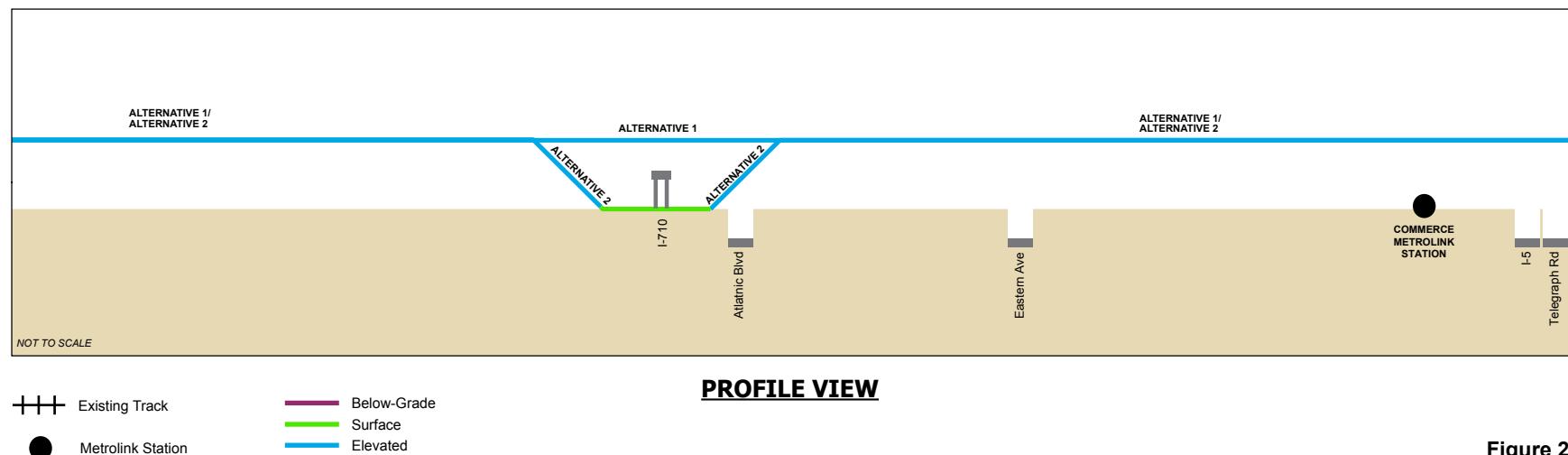


Figure 2
Alternative 1, Alternative 2 Plan and Profile



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
Source: STV, 2015
Imagery Source: STV, 2015

PLAN VIEW

December 23, 2015

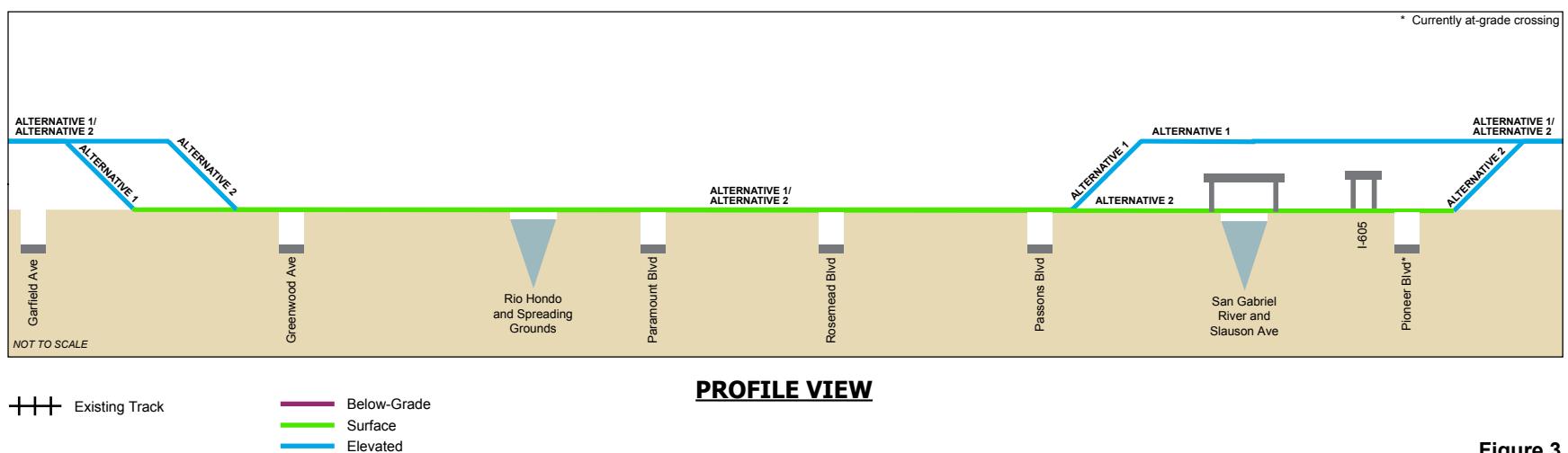
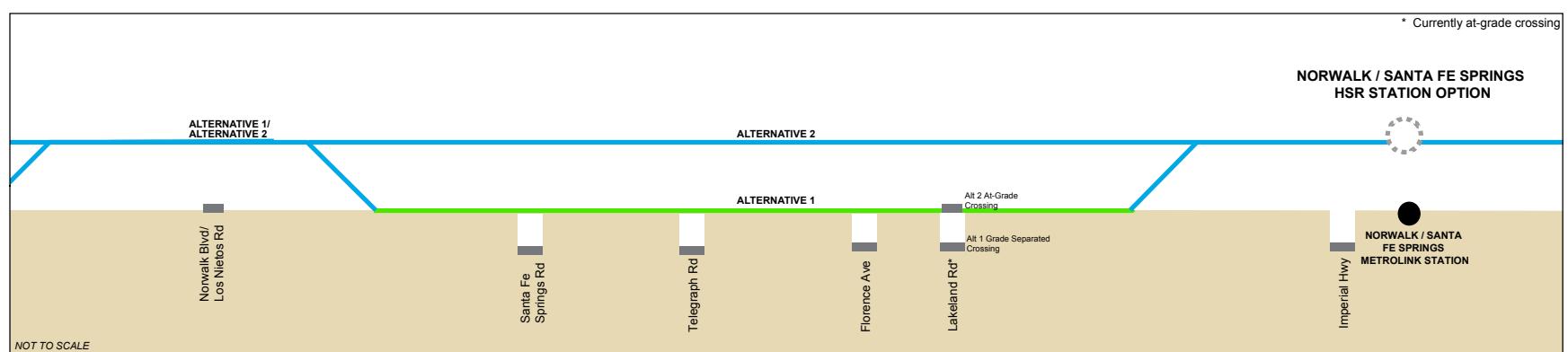
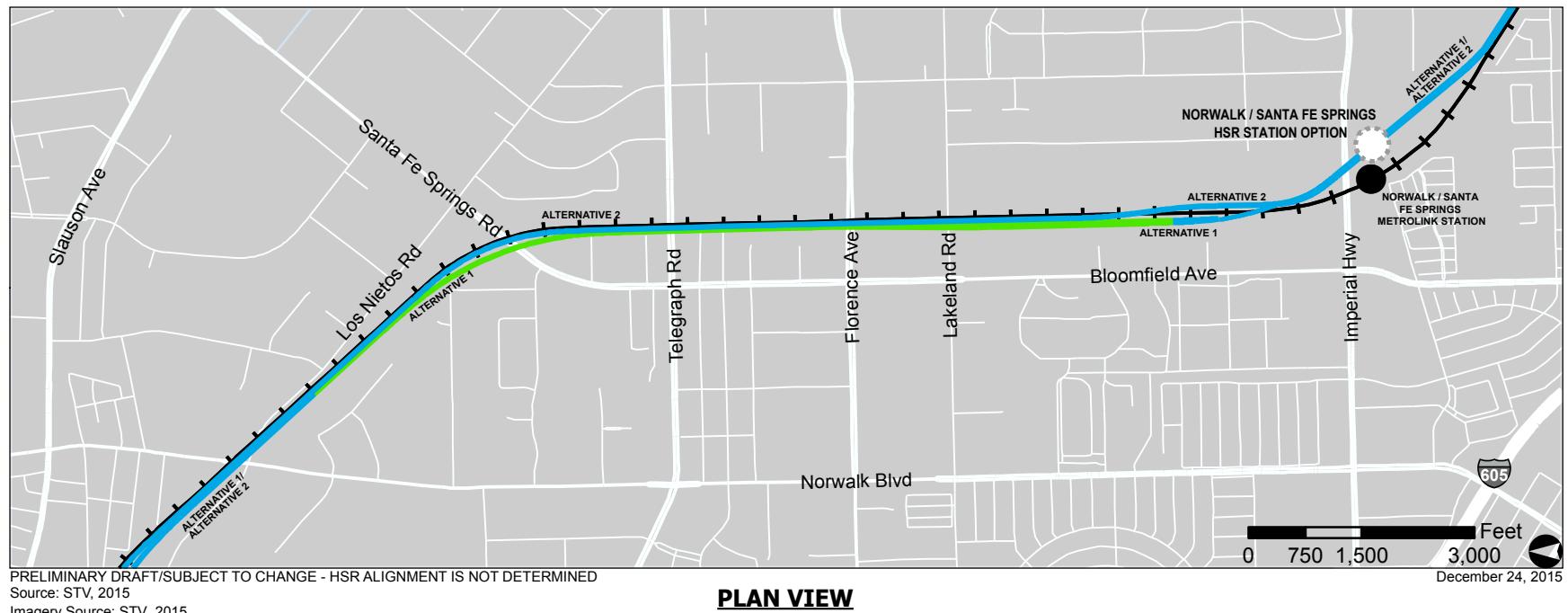
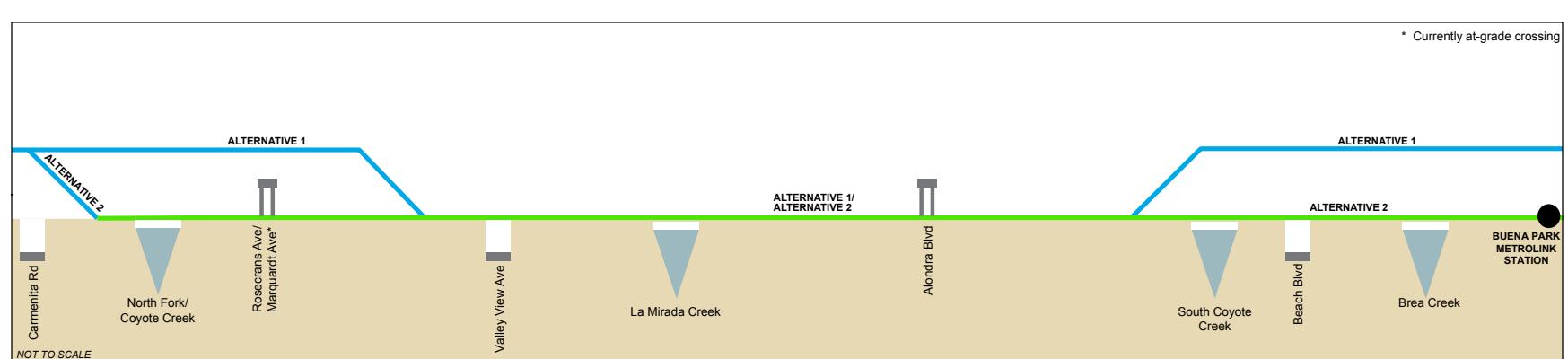


Figure 3
Alternative 1. Alternative 2 Plan and Profile



- Existing Track
- Proposed HSR Station Option
- Metrolink Station
- Below-Grade
- Surface
- Elevated

Figure 4
Alternative 1, Alternative 2 Plan and Profile



PROFILE VIEW

- Existing Track
- Metrolink Station
- Below-Grade
- Surface
- Elevated

Figure 5
Alternative 1, Alternative 2 Plan and Profile

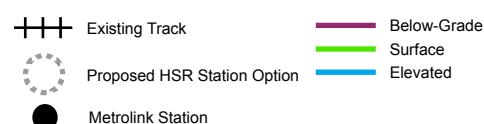
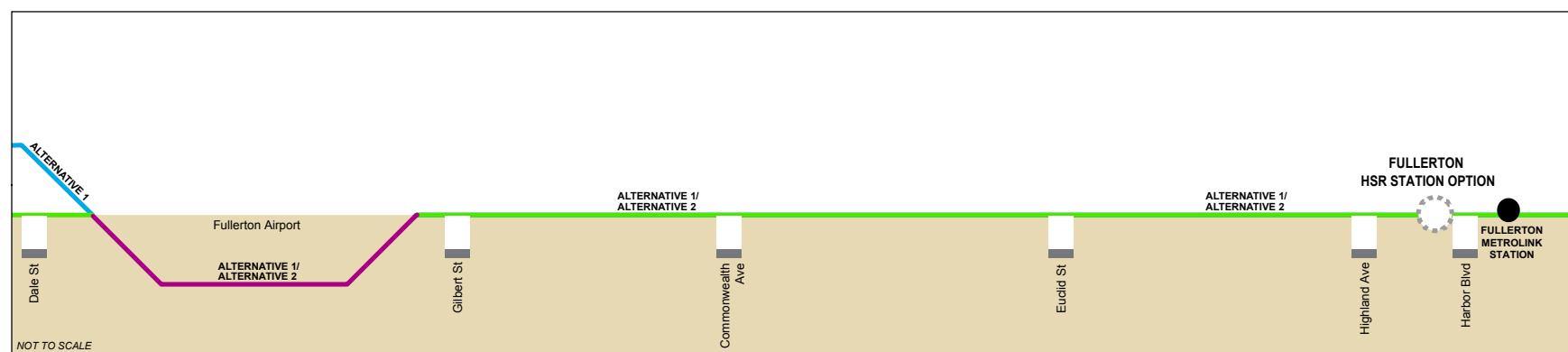
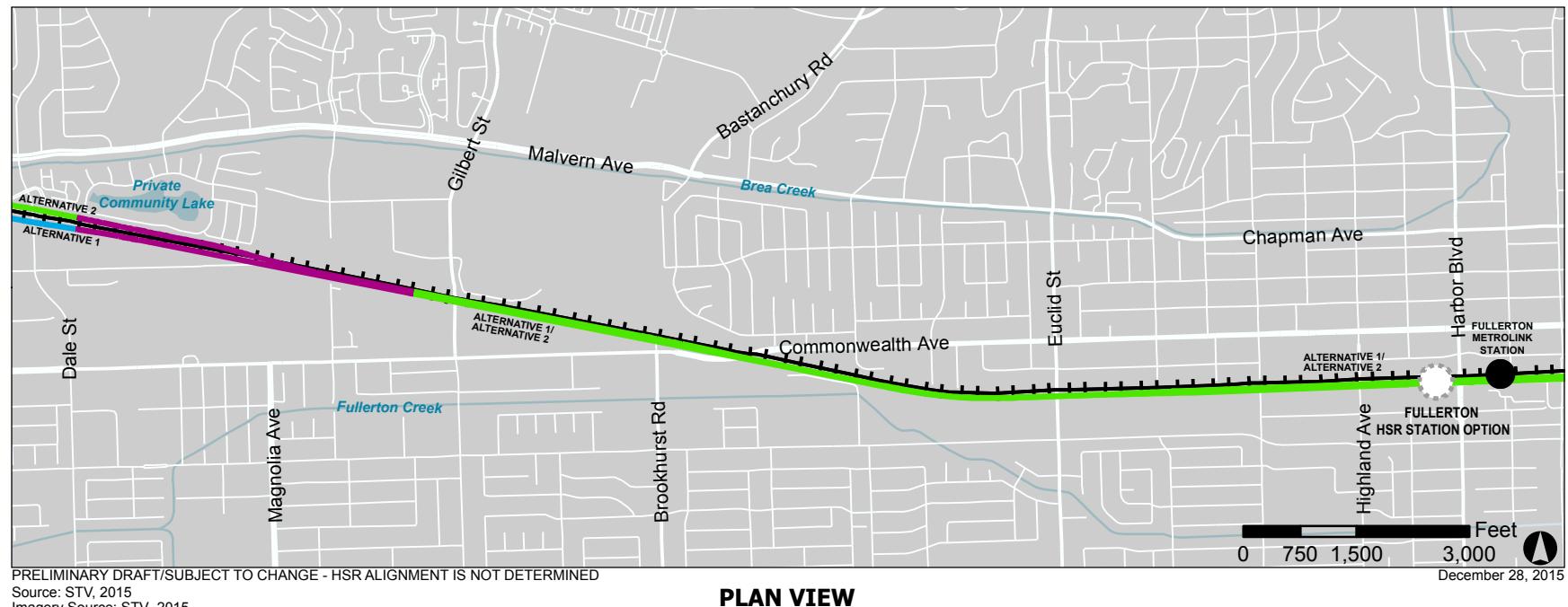
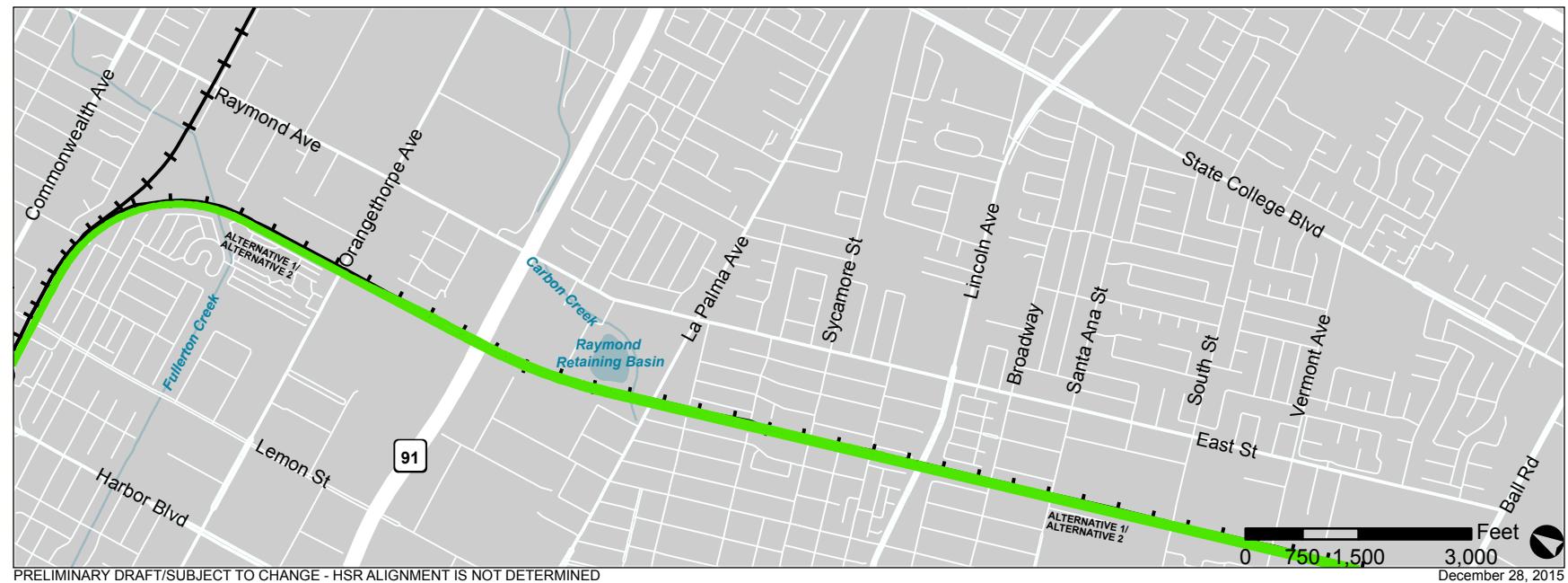
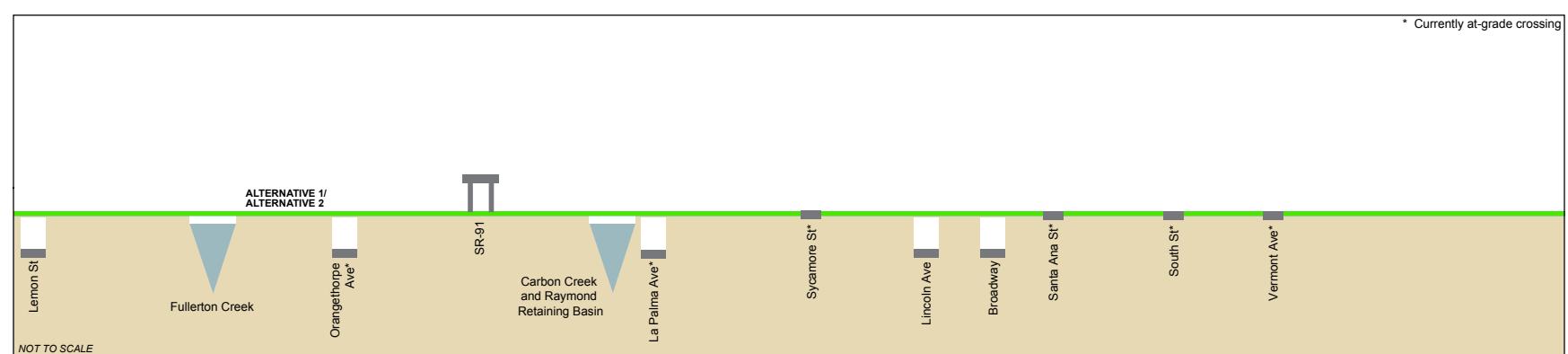


Figure 6
Alternative 1, Alternative 2 Plan and Profile



PLAN VIEW



PROFILE VIEW

- ++ Existing Track
- Below-Grade
- Surface
- Elevated

Figure 7
Alternative 1, Alternative 2 Plan and Profile

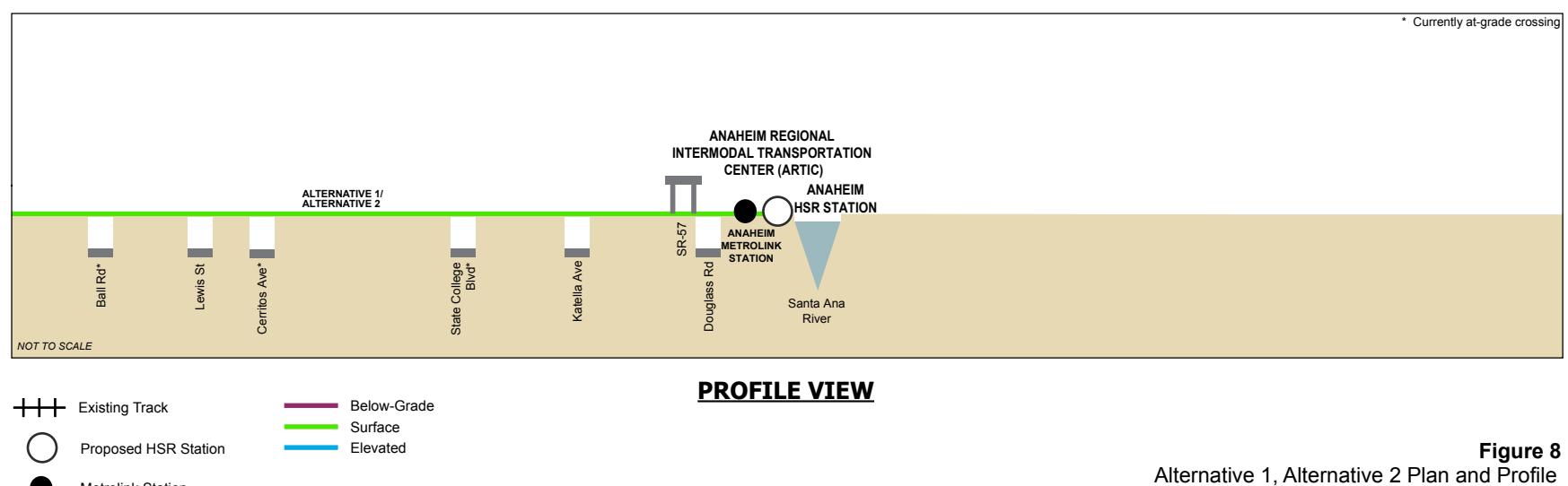
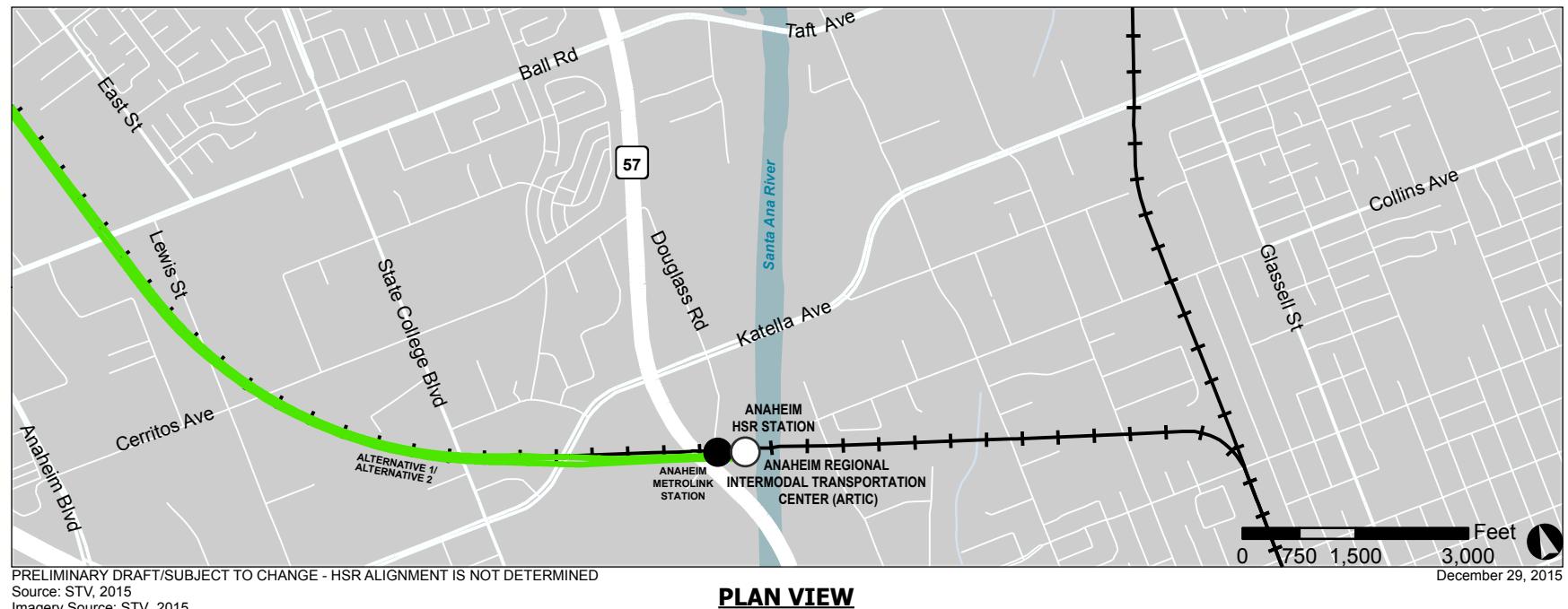


Figure 8
Alternative 1, Alternative 2 Plan and Profile